No. 5 CROSSBAR
SYSTEM FUNCTIONAL DIAGRAMS
SFD-10-01

VOLUME 2

Bell Laboratories

300-159

No. 5 CROSSBAR
SYSTEM FUNCTIONAL DIAGRAMS
SFD-10-01 VOL 2

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1	1	2	2		

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4	4	1-10-77	CDI RGA	JCT DAJ THJ
5	5	4-13-78	CDI NLF	JCT DAJ RCA

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1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

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CATEGORY	NO

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BC02

CROSSBAR SYSTEMS
NO 5

SYSTEM FUNCTIONAL DIAGRAMS

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG. SIZE
6S

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SFD-10-01-A001
1,274 SHEETS
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PRINTED IN U.S.A.

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RESERVED	N007										
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ISSUE	DWG SIZE	
5	6S	SYSTEM FUNCTIONAL DIAGRAMS
SFD-10-01-	A014	BELL LABORATORIES

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E-7481 (6-75) PRINTED IN U.S.A.

GENERAL DESCRIPTION OF SFD-10-01

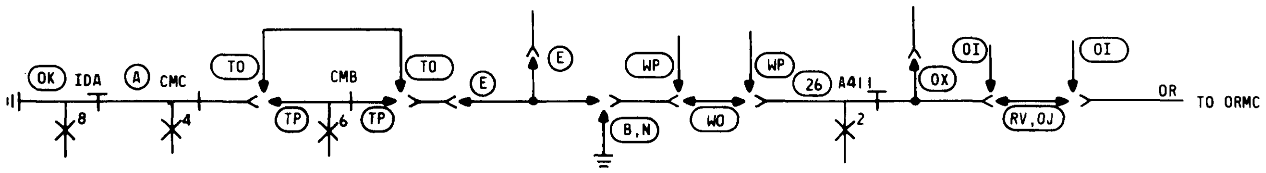
A MAJOR OBJECTIVE OF SFD-10-01 IS TO PORTRAY, IN SIMPLE FORM, THE SYSTEM SERVICE FUNCTIONS OF THE BASIC NO 5 CROSSBAR OFFICE, WIRE SPRING MARKER GROUP, WHICH PROVIDES POTS (PLAIN OLD TELEPHONE SERVICE). A FURTHER OBJECTIVE IS TO CORRELATE SERVICE FUNCTIONS WITH THE MAINTENANCE FACILITIES WHICH HAVE BEEN PROVIDED TO AID IN DETECTING, ANALYZING, LOCATING, AND CLEARING TROUBLE CONDITIONS.

SFD-10-01 IS DIVIDED INTO A NUMBER OF SECTIONS, EACH OF WHICH EXCEPT FOR SECTION "A", DESCRIBES A SPECIFIC JOB PREFORMED BY NO 5 CROSSBAR. EACH SECTION IS DIVIDED INTO PARTS WHICH DESCRIBE THE MAJOR STEPS OR OPERATIONS THROUGH WHICH THE SYSTEM PROCEEDS TO PERFORM THE JOB.

SD VERSES SFD

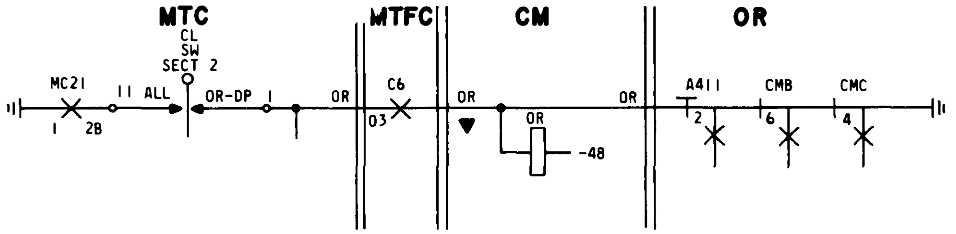
THE TWO SKETCHES SHOWN BELOW ARE USED TO ILLUSTRATE THE SD AND SFD METHODS OF SHOWING THE GROUNDING OF THE OR LEAD. AS ILLUSTRATED, THE SD ARRANGEMENT SHOWS ALL POSSIBLE OPTIONS WHEREAS THE SFD SHOWS A SIMPLIFIED, LESS OPTIONAL PATH. WHERE COMPLEX CIRCUITRY IS INVOLVED, IT MAY BE NECESSARY FOR THE MAINTENANCE PERSON TO REFER TO THE SD DRAWING.

STANDARD SD ARRANGEMENT (OR CKT)



OPTIONS USED IN SFD	SD APPARATUS/ WIRING	CIRCUIT NOTES
✓	26	NUMBERING PLAN AREA TRANSLATOR (MD 45D).
✓	A,E,WO	REQUIRED FOR PRETRANSLATION OF REGULAR OR REGULAR AND IDDD CODES
	B,N,WP	PRETRANSLATORS NOT REQUIRED.
	OI,OJ,OK,OX	IDDD REQUIRED.
✓	RV	IDDD NOT REQUIRED.
	TO	WHERE THE REGISTER IS NOT ARRANGED FOR PRT AND.
		INTERCHANGEABLE NPA AND LOCAL AREA CODE.
✓	TP	WHERE THE REGISTER IS ARRANGED FOR PRT AND
		INTERCHANGEABLE NPA AND LOCAL AREA CODE.

SFD ARRANGEMENT



GENERAL DESCRIPTION

DWG SIZE 6S

ISSUE 5

BELL LABORATORIES

SFD-10-01-

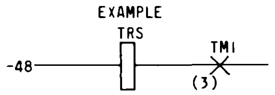
A101

E-7421 (6-75)
PRINTED IN U.S.A.

INFORMATION NOTES

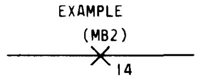
CONTACTS IN PARENTHESIS

PARENTHESIS ARE USED AROUND CONTACTS TO ALERT THE USER THAT AN OPTIONAL ARRANGEMENT EXISTS. THE CONTACT ARRANGEMENT SHOWN IN SFD-10-01 ISSUE 4,IS THE ARRANGEMENT MOST LIKELY PROVIDED IN THE MAJORITY OF NO. 5 CSBR OFFICES.



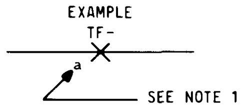
RELAYS IN PARENTHESIS

PARENTHESIS ARE USED AROUND RELAY DESIGNATIONS TO ALERT THE USER THAT AN OPTIONAL ARRANGEMENT EXISTS. THE RELAY DESIGNATION SHOWN IN SFD-10-01 ISSUE 4, IS THE RELAY MOST LIKELY PROVIDED IN THE MAJORITY OF NO. 5 CSBR OFFICES.



NUMEROUS OR COMPLEX CONTACT ARRANGEMENT

WHEN CONTACTS ARE TOO NUMEROUS OR THE ARRANGEMENT TOO COMPLEX, A LOWER CASE LETTER AND NOTE DIRECT THE USER TO THE SCHEMATIC DRAWING FOR THE CONTACT ARRANGEMENT.



SHEET NOTES:

1. a - SEE SD-26002-01, FS 24, FOR CONTACT ARRANGEMENT.

OPTION ASSIGNMENTS

SHEET OPTION ASSIGNMENTS Ⓐ THRU Ⓜ WILL ALWAYS BE THE SAME THROUGHOUT THE SFD-10-01 DOCUMENT. OPTIONS Ⓝ THRU Ⓩ WILL VARY AND WILL PERTAIN ONLY TO THE SHEET WHERE THE OPTION APPEARS.

Ⓐ 2X TROUBLE CARD;SD-27718-01
Ⓑ 1X TROUBLE CARD, SINGLE SIDED;SD-25805-01, TABLE I
Ⓒ 1X TROUBLE CARD, DOUBLE SIDED;SD-25805-01, TABLE IA
Ⓓ TRIPLE TRUNK LINK FRAME
Ⓔ PAIRED TRUNK LINK FRAME
Ⓕ NON PAIRED LINE LINK FRAME
Ⓖ PAIRED LINE LINK OPERATION
Ⓗ TRUNK LINK; SD-26032-01
Ⓙ 30 CLASSES OF SERVICE
Ⓚ 60 CLASSES OF SERVICE
Ⓛ 100 CLASSES OF SERVICE
Ⓜ TRUNK LINK;SD-27879-01
(STD) STANDARD ARRANGEMENT
(MD) MANUFACTURE DISCONTINUED ARRANGEMENT
(A&M) ADDITIONS AND MAINTENANCE ONLY ARRANGEMENT

SEQUENCE CHARTS FOUND IN SFD-10-01 VOL III

SEQUENCE CHARTS SHOWN IN SFD-10-01 VOL III COVER OPERATIONS FOUND IN SD-27718-01, TABLE I. FUNCTIONAL SCHEMATIC PAGES INCLUDE SD-25805-01, TABLE I AND IA; AND SD-27718-01, TABLE I.

DOUBLE LINE BOXES ON SEQUENCE CHARTS

DOUBLE LINE BOXES:

1. ARE ALWAYS REFERENCE TO ANOTHER PART (NOT CIRCUIT).
2. IF SHOWN AS J1, THEN THE ENCLOSED SC IS COMPLETE AND ACCURATE FOR THE TYPE TEST BEING COVERED (EXAMPLE: OGT M004)
3. IF SHOWN AS K103 (ON PAGE M005), THEN ANY DETAIL INSIDE IS:
   - (A) REPEAT OF DETAIL FOUND ON K103 THAT IS IMPORTANT TO OGT TEST, AND
   - (B) DETAIL THAT TAKES PLACE IN THE "TIME FRAME" OF THE K103 SEQUENCE CHART AND FOR WHICH THE RELAYS SHOWN IN THE SC ARE ILLUSTRATED IN K1 PART.

A SECTION

A0 - VOL I,II,III
A1 - VOL I,II,III
A2 - VOL I,II,III
A3 - VOL I
A4 - VOL I
A5 - VOL II
A6 - VOL II
A7 - VOL III
A8 - VOL III

ISSUE
5

SFD-10-01-A102

INFORMATION NOTES

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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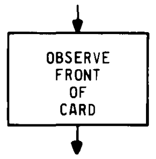
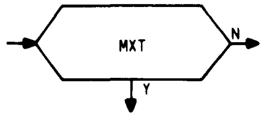
FLOW CHARTS

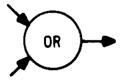
SYMBOLS USED IN FLOW CHARTS ARE AS FOLLOWS:



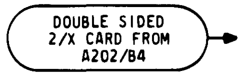
INSTRUCTION AND/OR INFORMATION BLOCK.



DECISION BLOCK - IS MXT DESIGNATION PUNCHED ON TROUBLE CARD N = NO, Y = YES



PROCEED THROUGH FROM EITHER INPUT.

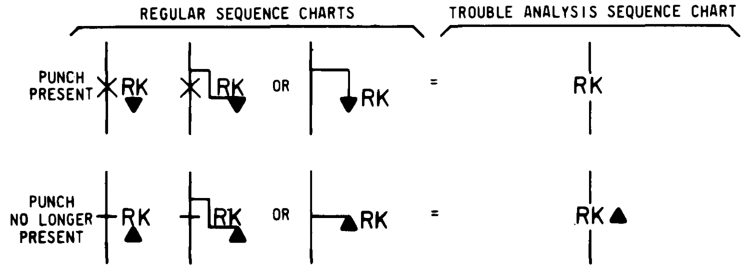


INPUT FROM ANOTHER LOCATION

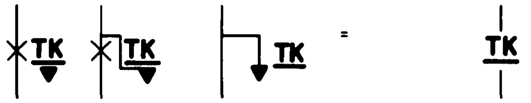
TROUBLE ANALYSIS SEQUENCE CHARTS

TROUBLE ANALYSIS SEQUENCE CHARTS SHOW SEQUENCE ONLY OF THE OCCURENCE OF PUNCHED TROUBLE RECORD DESIGNATIONS. THIS IS ALL THAT NEED BE OF CONCERN IN ANALYZING A CARD. THE TROUBLE ANALYSIS SEQUENCE CHART CROSS REFERENCES TO PAGES OF THE REGULAR SEQUENCE CHARTS FOR TROUBLE LOCATING PURPOSES.

THE FOLLOWING METHOD OF SHOWING SEQUENCE OF TROUBLE PUNCHES IS USED IN SFD:



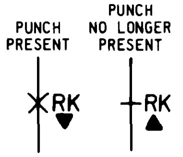
KEY PROGRESS INDICATION POINTS ARE SHOWN IN BOLD LETTERING WITH A HEAVY UNDERLINE FOR EASE IN LOCATING.



SEQUENCE CHARTS

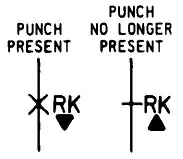
STANDARD SYMBOLS HAVE BEEN USED IN DETACHED CONTACT DRAWINGS AND SEQUENCE CHARTS PER BSP 005-109-101 EXCEPT AS FOLLOWS:

STANDARD (SD)

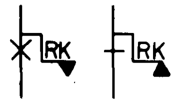


INDICATES THAT RK DESIGNATION IS PUNCHED EITHER FROM THE SAME SOURCE THAT OPERATED THE RK RELAY OR FROM A CONTACT CLOSURE OF THE RK RELAY.

PROPOSED STANDARD USED IN SFD

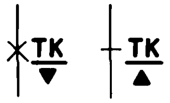


INDICATES THAT RK DESIGNATION IS PUNCHED FROM A CONTACT CLOSURE OF THE RK RELAY.

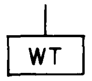


INDICATES THAT RK DESIGNATION IS PUNCHED FROM THE SAME SOURCE THAT ENERGIZED THE RELAY WINDING.

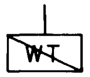
KEY PROGRESS INDICATION POINTS ARE SHOWN IN BOLD LETTERING WITH A HEAVY UNDERLINE FOR EASE IN LOCATING.



TIMING FUNCTIONS ARE DESIGNATED



INDICATES THE START OF A TIMING CIRCUIT



INDICATES A TIMING CIRCUIT HAS STOPPED

ISSUE
5

SYMBOLS

SFD-10-01-A103

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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CONNECTING CIRCUIT INDEX

ABBR	TITLE		SD-
5A TM	5A TIMER CKT		99304-01
-	KEY SHEET		25760-01
AA	AISLE ALARM		25671-01
AC-C3	AC CURRENT SUPPLY		
ALL	AUXILIARY LINE LINK		27719-01
ALM	ALARM		25671-01
ALMR	ALARM RECEIVING		95418-01
ALMS	ALARM SENDING		95417-01
AMB	ALL MARKERS BUSY		25695-01
AMRST	AUTOMATIC MONITOR,REGISTER, AND SENDER TEST (MASTER TEST FRAME)		25680-01
APTT	AUTOMATIC PROGRESSION TRUNK TEST		25938-01
BC	BATTERY CONTROL		81121-01
CM	COMPLETING MARKER		26002-01
CNS	COIN SUPERVISORY		25736-01
CSL	COIN SUPERVISORY LINK		26049-01
DTM	DIAL TONE MARKER		26001-01
DTTDC	DT TIME DELAY CONTROL		94820-01
GB	GROUP BUSY		25795-01
IAO	INTRAOFFICE TRUNK		26060-01
IMGS	INTERMARKER GROUP SENDER		25826-01
IMGT	INTERMARKER GROUP TRUNK		26141-01
IR	INCOMING REGISTER	MF	26042-01
		DP	26041-01
IRL	INCOMING REGISTER LINK		26048-01
IRMC	INCOMING REGISTER MARKER CONNECTOR	MKR	26025-01
		REG	26026-01
IT	INCOMING TRUNK		26070-01
IT SW	INCOMING TRUNK SW		95500-01
ITT	INCOMING TANDEM TRUNK		26071-01
	INCOMING TANDEM TRUNK (BYLINK)		26077-01
JGF	JUNCTOR GROUPING FRAME		-
JLK	JACK,LAMP, AND KEY (MASTER TEST FRAME)		25762-01

ABBR	TITLE		SD-
LINE	COIN,TWO PARTY AND INDIVIDUAL		-
LIT	LINE INSULATION TEST		95537-01
LITC	LINE INSULATION TEST CONTROL		25796-01
LL	LINE LINK FRAME		26030-01
LLC	LINE LINK CONNECTOR		26031-01
LLDC	LINE LOAD CONTROL		96387-01
LLMC	LINE LINK MARKER CONNECTOR		26022-01
LV	LINE VERIFICATION		26181-01
M-AMPL	MONITOR AMPLIFIER		96516-01
MDF	MAIN DISTRIBUTING FRAME		-
MFCS	MULTIFREQUENCY CURRENT SUPPLY		95391-01
MFSR	MULTIFREQUENCY SIGNAL RECEIVING		95536-01
MISC	MISCELLANEOUS FOR ALL FRAMES		25574-01
MTC	MASTER TEST CONTROL		25800-01
MTFC	MASTER TEST FRAME CONNECTOR	STD	27718-01
		MD	25805-01
MTMG	MASTER TIMER		25633-01
MTRC	MASTER TRAFFIC CONTROL		26020-01
MW SUP	2A SENDING PANEL		95000-01
	MILLIWATT DISTG CKT		95277-01
NG	NUMBER GROUP		26034-01
NGC	NUMBER GROUP CONNECTOR		26035-01
NTC	NO TEST CONNECTOR		25702-01
OSGR	OUTGOING SENDER GROUP RELEASE		26055-01
OGT	OUTGOING TRUNK		26085-01
OGIT	OUTGOING INFORMATION TRUNK		26144-01
OGT JK	OUTGOING TRUNK TEST FR,TST AND MB JK		96376-01
OGTT	OUTGOING TRUNK TEST		95476-01
OI	OFFICE INTERRUPTER (60 OR 120 IPM)		25814-01
OR	ORIGINATING REGISTER		26040-01
ORMC	ORIGINATING REGISTER MARKER CONNECTOR	MKR	26023-01
		REG	26024-01
ORLM	ORIGINATING REGISTER LINE MEMORY	OR	26040-01
		TLC	26033-01
		ORMC	26024-01
OS	OUTGOING SENDER	MF	26051-01
		DP	26050-01
OSC	OUTGOING SENDER CONNECTOR	MKR	26059-01
		SDR	26057-01
OSL	OUTGOING SENDER LINK		25734-01
OT & P	OPERATOR TELEPHONE AND POSITION CKT		95502-01
PC	PREFERENCE CONTROL	LLMC,ORMC,IRMC	26029-01
PCMB	PREFERENCE CONTROL AND MAKE BUSY	LLC,OSC,TLC,NGC	26039-01
P-REG	PLANT REGISTER		25793-01
PRF	PERFORATOR		-

ABBR	TITLE		SD-
PRT	PRETRANSLATOR		25568-01
PRTC	PRETRANSLATOR CONNECTOR	PRT	25569-01
		REG	26038-01
PRTD	POWER,RING AND TONE DISTRIBUTION FRAME		25599-01
RCD	RECORDER (AUTOMATIC MESSAGE ACCOUNTING)		25872-01
REV	REVERTING CALL TRUNK		26068-01
RPTR	REPEATER		-
RSW	RINGING SWITCH		26080-01
SR	SIGNAL RECEIVER (MF)		95536-01
ST	SENDER TEST CKT		25675-01
STS	SENDER TEST SET		25674-01
TKL	TELEPHONE, KEY AND LAMP		25744-01
TL	TRUNK LINK	OPT H	26032-01
		OPT M	27879-01
TLC	TRUNK LINK CONNECTOR		26033-01
TN,GN	TONE GENERATOR CKT		99303-01
TP	TRUNK PREFERENCE		95501-01
TR	TROUBLE RECORDER		-
TRC	TROUBLE RECORDER CONTROL AND TEST		25572-01
T-REG	TRAFFIC REGISTER		25892-01
TRK	TRUNK		-
TRNSL	TRANSLATOR (AUTOMATIC MESSAGE ACCOUNTING)		26019-01
TS	TEST SET		
TT	TRUNK TEST (MASTER TEST FRAME)		25918-01
TT REG	TRUNK TEST REGISTER		27643-01
T-TERM	TEST TERMINATION		96540-01
TTL	TRANSMISSION TEST LINE		98100-01
TTR	"TOUCH-TONE" CALLING RECEIVING CIRCUIT-TYPE A2,ISSUE 1-4		95287-01
	"TOUCH-TONE" CALLING RECEIVING CIRCUIT-TYPE A3,POST ISSUE 5		98148-01
TTSTR	"TOUCH-TONE" STATION TEST RECEIVER-TYPE E1		98150-01
TUR	TRAFFIC USAGE RECORDER		95738-01
TV	TRANSVERTER (AUTOMATIC MESSAGE ACCOUNTING)		25591-01
TVC	TRANSVERTER CONNECTOR (AUTOMATIC MESSAGE ACCOUNTING)		26021-01
VM TST	MTF VOLTMETER TEST CKT		25792-01

ISSUE
5

SFD-10-01-A104

CONNECTING CKT INDEX

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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E-7481-L (4-73)

ESTABLISHING NO.5 CROSSBAR CONNECTIONS

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A203	DOUBLE SIDED 2/X TROUBLE CARD
A204	DOUBLE SIDED 1/X TROUBLE CARD (E4393) FLOW CHART INDEX FOR ANALYSIS
A205	DOUBLE SIDED 1/X TROUBLE CARD
A206	SINGLE SIDED 1/X TROUBLE CARD (E3638) FLOW CHART INDEX FOR ANALYSIS
A207	SINGLE SIDED 1/X TROUBLE CARD

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE
5

NO. 5 CROSSBAR FLOW CHARTS

SFD-10-01-A201

BELL TELEPHONE LABORATORIES
INCORPORATED

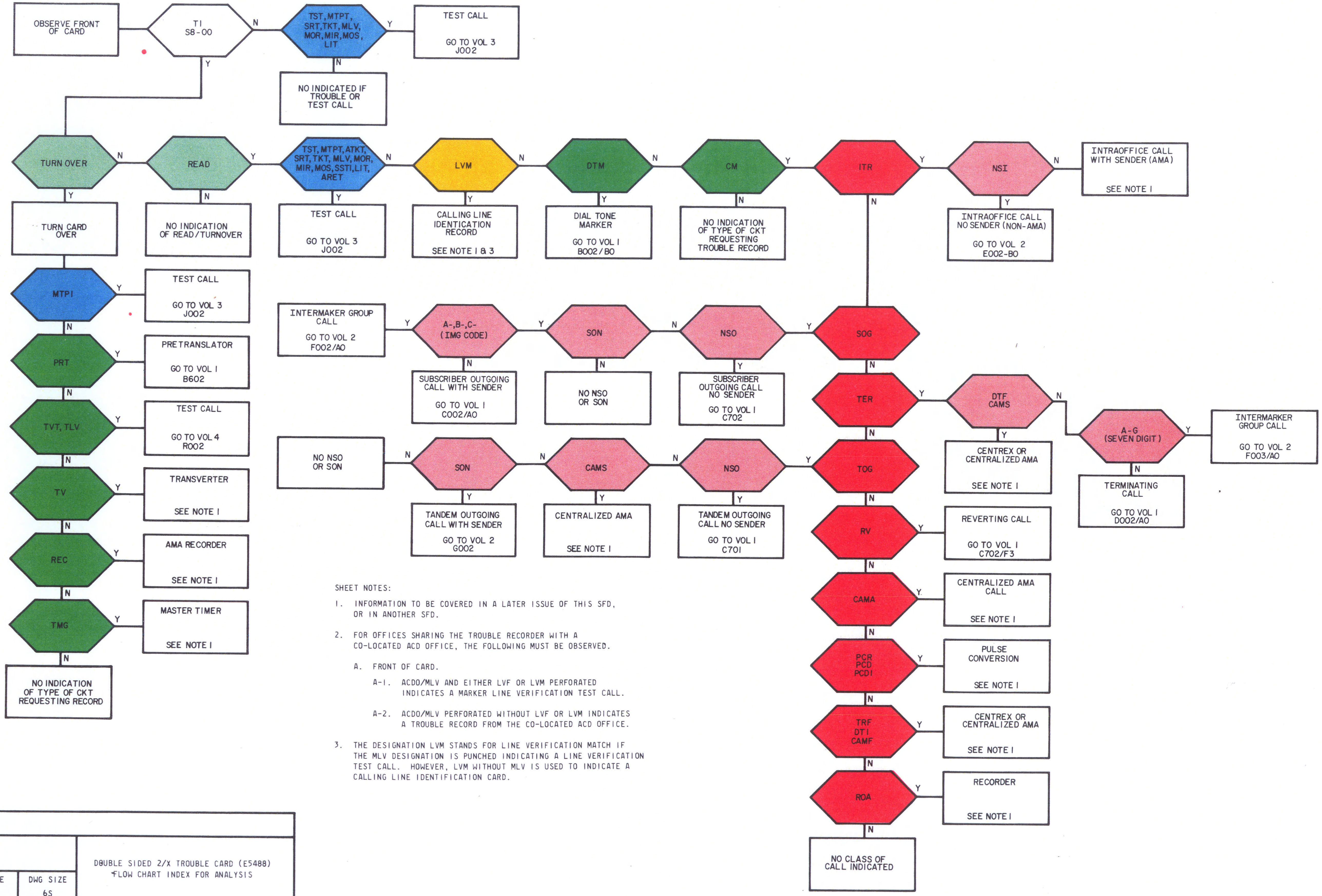
DWG SIZE
6S

PRINTED IN U.S.A.

E-7481 (10-71)

K&E 10 1155 10-75 45115

FLOW CHART
DOUBLE SIDED 2/X TROUBLE CARD


OBSERVE FRONT OF CARD
TI S8-00
N
Y
TST, MTPT, SRT, TKT, MLV, MOR, MIR, MOS, LIT
TEST CALL GO TO VOL 3 J002
NO INDICATED IF TROUBLE OR TEST CALL
TURN OVER
READ
TST, MTPT, ATKT, SRT, TKT, MLV, MOR, MIR, MOS, SSTI, LIT, ARET
LVM
DTM
CM
ITR
NSI
INTRAOFFICE CALL WITH SENDER (AMA) SEE NOTE I
TURN CARD OVER
NO INDICATION OF READ/TURNOVER
TEST CALL GO TO VOL 3 J002
CALLING LINE IDENTIFICATION RECORD SEE NOTE I & 3
DIAL TONE MARKER GO TO VOL I B002/B0
NO INDICATION OF TYPE OF CKT REQUESTING TROUBLE RECORD
INTRAOFFICE CALL NO SENDER (NON-AMA) GO TO VOL 2 E002-B0
MTPI
TEST CALL GO TO VOL 3 J002
INTERMAKER GROUP CALL GO TO VOL 2 F002/A0
A-, B-, C- (IMG CODE)
SON
NSO
SOG
PRT
PRETRANSLATOR GO TO VOL I B602
SUBSCRIBER OUTGOING CALL WITH SENDER GO TO VOL I C002/A0
NO NSO OR SON
SUBSCRIBER OUTGOING CALL NO SENDER GO TO VOL I C702
TER
DTF CAMS
A-G (SEVEN DIGIT)
INTERMARKER GROUP CALL GO TO VOL 2 F003/A0
TVT, TLV
TEST CALL GO TO VOL 4 R002
NO NSO OR SON
SON
CAMS
NSO
TOG
CENTREX OR CENTRALIZED AMA SEE NOTE I
TERMINATING CALL GO TO VOL I D002/A0
TV
TRANSVERTER SEE NOTE I
TANDEM OUTGOING CALL WITH SENDER GO TO VOL 2 G002
CENTRALIZED AMA SEE NOTE I
TANDEM OUTGOING CALL NO SENDER GO TO VOL I C701
RV
REVERTING CALL GO TO VOL I C702/F3
REC
AMA RECORDER SEE NOTE I
CAMA
CENTRALIZED AMA CALL SEE NOTE I
TMG
MASTER TIMER SEE NOTE I
PCR PCD PCDI
PULSE CONVERSION SEE NOTE I
NO INDICATION OF TYPE OF CKT REQUESTING RECORD
TRF DTI CAMF
CENTREX OR CENTRALIZED AMA SEE NOTE I
ROA
RECORDER SEE NOTE I
NO CLASS OF CALL INDICATED

SHEET NOTES:

1. INFORMATION TO BE COVERED IN A LATER ISSUE OF THIS SFD, OR IN ANOTHER SFD.

2. FOR OFFICES SHARING THE TROUBLE RECORDER WITH A CO-LOCATED ACD OFFICE, THE FOLLOWING MUST BE OBSERVED.

   A. FRONT OF CARD.

      A-1. ACDO/MLV AND EITHER LVF OR LVM PERFORATED INDICATES A MARKER LINE VERIFICATION TEST CALL.

      A-2. ACDO/MLV PERFORATED WITHOUT LVF OR LVM INDICATES A TROUBLE RECORD FROM THE CO-LOCATED ACD OFFICE.

3. THE DESIGNATION LVM STANDS FOR LINE VERIFICATION MATCH IF THE MLV DESIGNATION IS PUNCHED INDICATING A LINE VERIFICATION TEST CALL. HOWEVER, LVM WITHOUT MLV IS USED TO INDICATE A CALLING LINE IDENTIFICATION CARD.

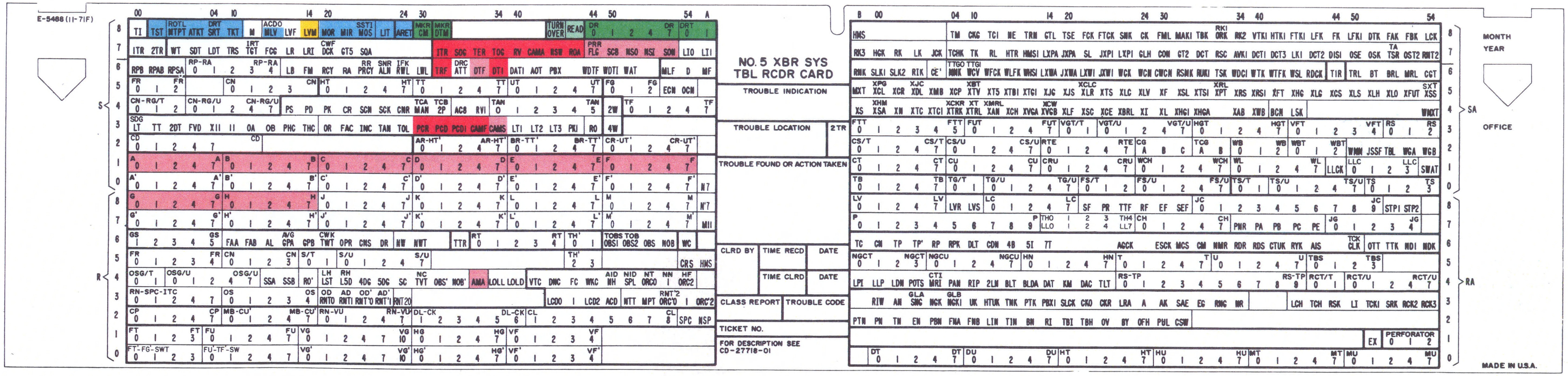
ISSUE	DWG SIZE	DOUBLE SIDED 2/X TROUBLE CARD (E5488) FLOW CHART INDEX FOR ANALYSIS
5	6S	

SFD-10-01- A202 BELL LABORATORIES

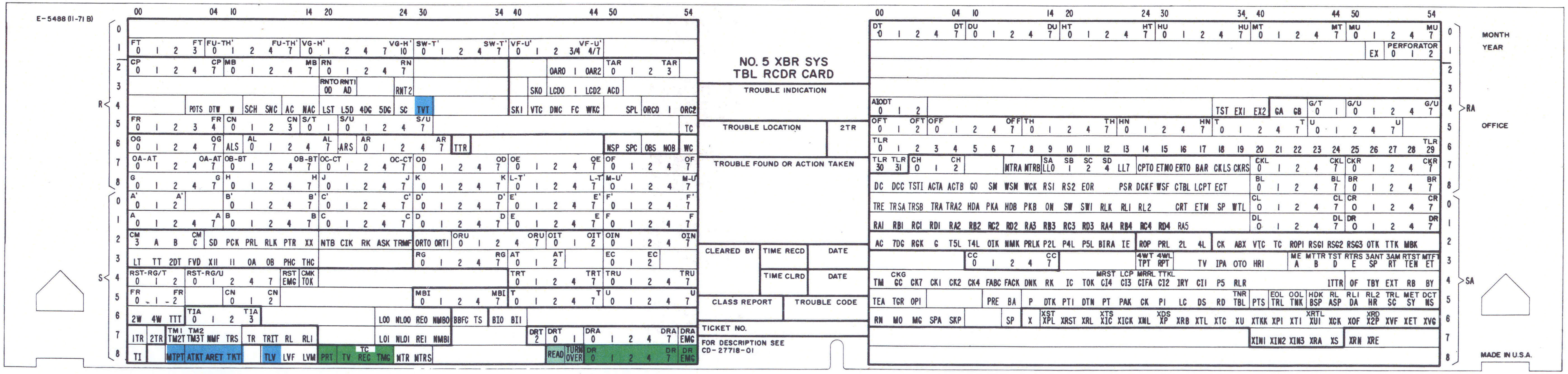
SFD-10-01-A202
7 SHEETS, SHEET I

DOUBLE SIDED 2/X

FRONT



BACK



🟩	READ/TURN OVER
🟥	TYPE OF CALL
🟪	SUB TYPE OF CALL
🟩	TYPE OF EQUIPMENT REQUESTING TROUBLE RECORD
🟨	CALLING LINE IDENTIFICATION
🟦	TEST CALLS

ISSUE
5

DOUBLE SIDED 2/X
TROUBLE CARD

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

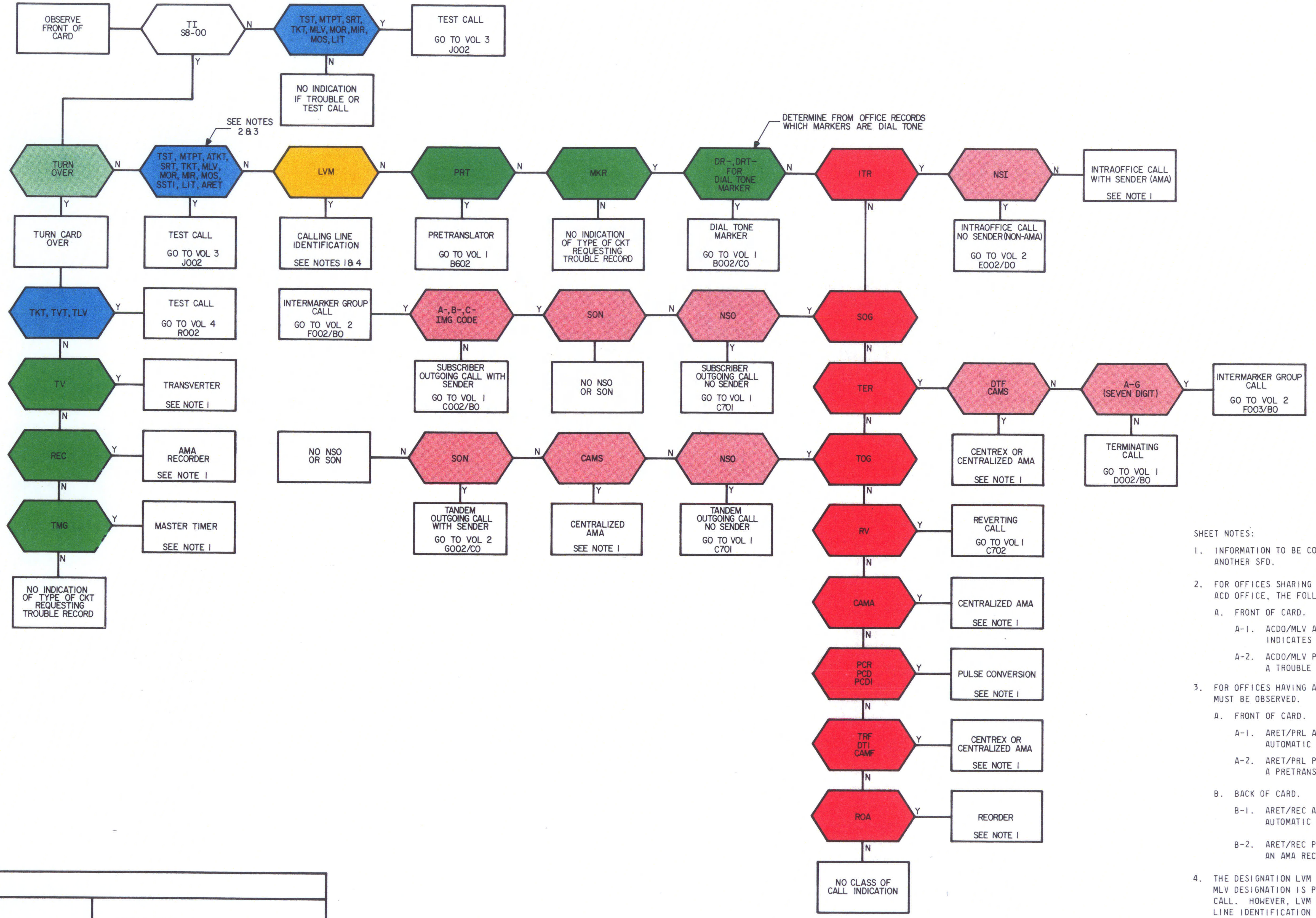
SFD-10-01-A203

PRINTED IN U.S.A.

SFD-10-01-A203
7 SHEETS, SHEET 1

E-7421 (10-71)

FLOW CHART
DOUBLE SIDED I/X TROUBLE CARD



SHEET NOTES:

1. INFORMATION TO BE COVERED IN A LATER ISSUE OF THIS SFD, OR IN ANOTHER SFD.

2. FOR OFFICES SHARING THE TROUBLE RECORDER WITH A CO-LOCATED ACD OFFICE, THE FOLLOWING MUST BE OBSERVED.

   A. FRONT OF CARD.

      A-1. ACDO/MLV AND EITHER LVF OR LVM PERFORATED INDICATES A MARKER LINE VERIFICATION TEST CALL.

      A-2. ACDO/MLV PERFORATED WITHOUT LVF OR LVM INDICATES A TROUBLE RECORD FROM THE CO-LOCATED ACD OFFICE.

3. FOR OFFICES HAVING AUTOMATIC RANGE EXTENSION, THE FOLLOWING MUST BE OBSERVED.

   A. FRONT OF CARD.

      A-1. ARET/PRL AND MKR BOTH PERFORATED INDICATES AN AUTOMATIC RANGE EXTENSION TEST CALL.

      A-2. ARET/PRL PERFORATED WITHOUT A MKR PUNCH INDICATES A PRETRANSLATOR REQUESTED THE RECORD.

   B. BACK OF CARD.

      B-1. ARET/REC AND ARET BOTH PERFORATED INDICATES AN AUTOMATIC RANGE EXTENSION TEST CALL.

      B-2. ARET/REC PERFORATED WITHOUT A REC PUNCH INDICATES AN AMA RECORDER REQUESTED THE RECORD.

4. THE DESIGNATION LVM STANDS FOR LINE VERIFICATION MATCH IF THE MLV DESIGNATION IS PUNCHED INDICATING A LINE VERIFICATION TEST CALL. HOWEVER, LVM WITHOUT MLV IS USED TO INDICATE A CALLING LINE IDENTIFICATION CARD.

ISSUE 5	DWG SIZE 6S	DOUBLE SIDED I/X TROUBLE CARD (E4393) FLOW CHART INDEX FOR ANALYSIS
SFD-10-01-	A204	BELL LABORATORIES

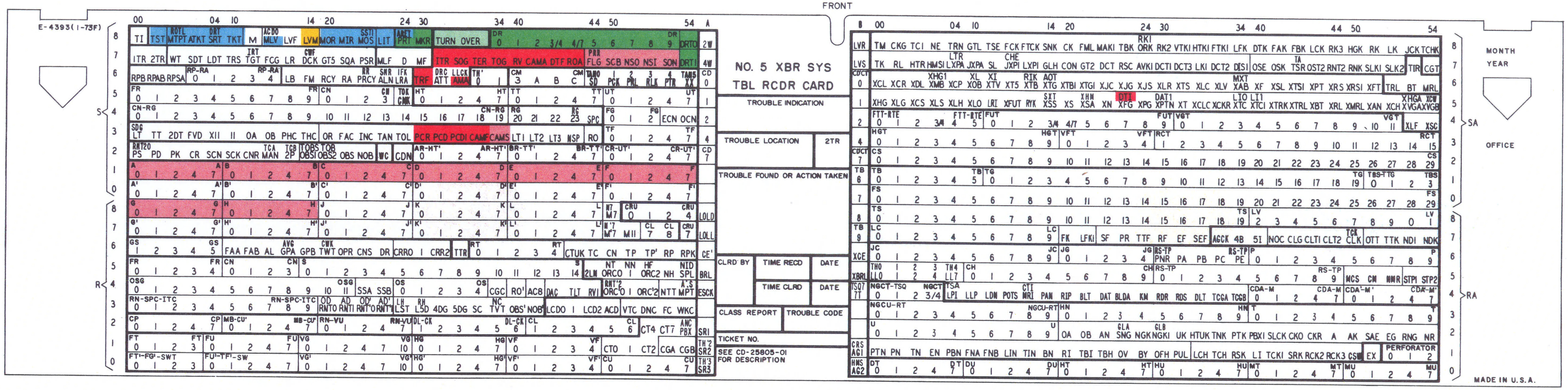
K&E 19 1153 2-77 41387

SFD-10-01-A204
7 SHEETS, SHEET 1

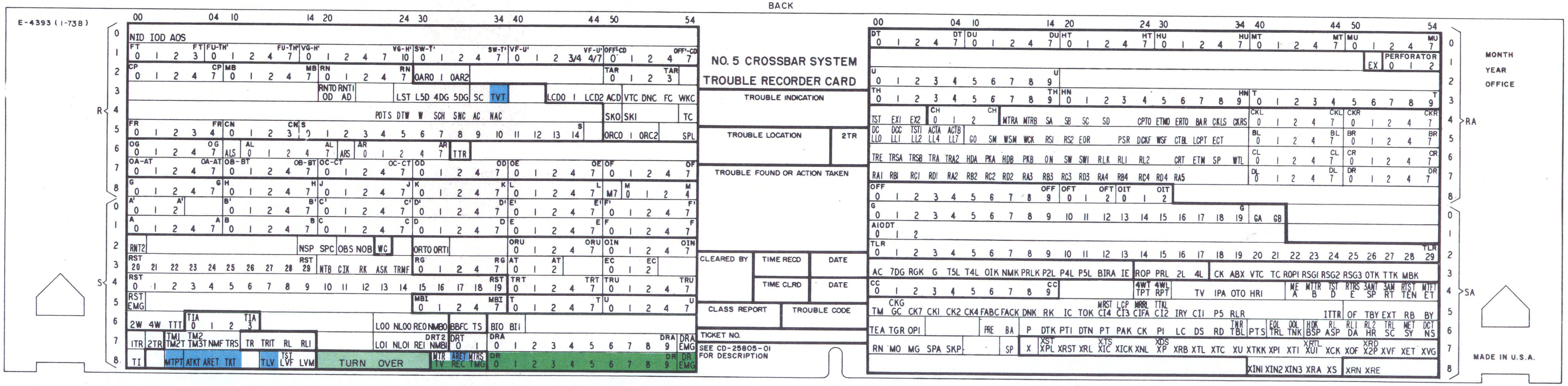
E-7481 (8-79)
PRINTED IN U.S.A.

DOUBLE SIDED I/X

FRONT



BACK



🟩	READ/TURN OVER	🟩	TYPE OF EQUIPMENT REQUESTING TROUBLE RECORD
🟥	TYPE OF CALL	🟨	CALLING LINE IDENTIFICATION
▨	SUB TYPE OF CALL	🟦	TEST CALLS

ISSUE
5

DOUBLE SIDED I/X
TROUBLE CARD

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

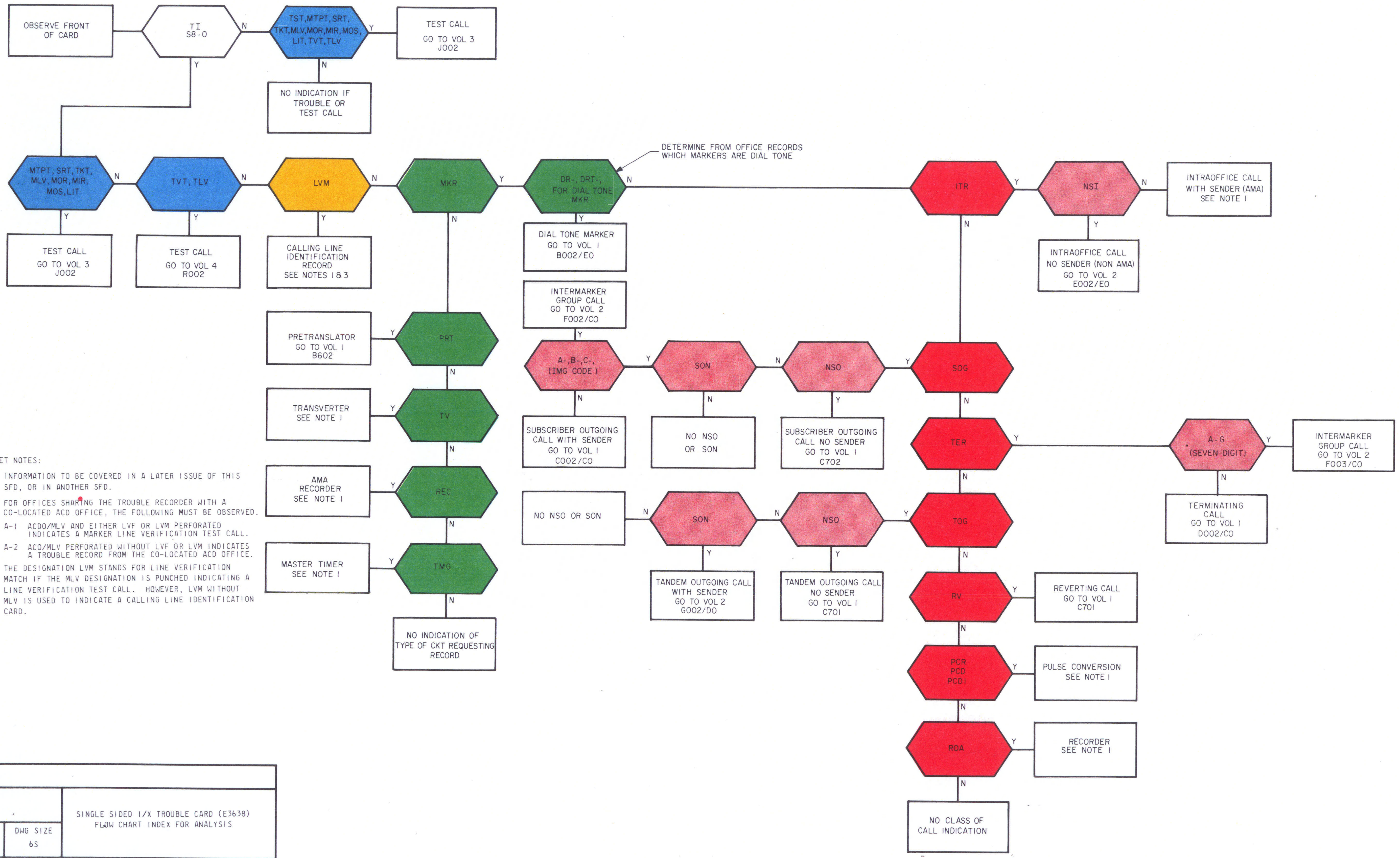
SFD-10-01-A205

PRINTED IN U.S.A.

E-7481 (10-71)

SFD-10-01-A205
7 SHEETS, SHEET 1

FLOW CHART
SINGLE SIDED I/X TROUBLE CARD

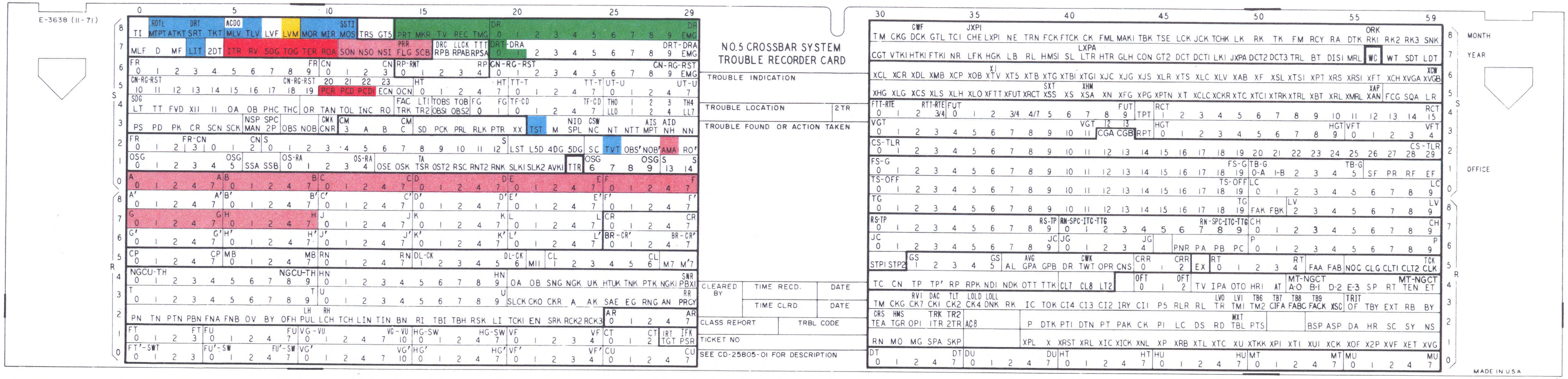

OBSERVE FRONT OF CARD
TI S8-0
N
Y
TST, MTPT, SRT, TKT, MLV, MOR, MIR, MOS, LIT, TVT, TLV
Y
N
TEST CALL GO TO VOL 3 J002
NO INDICATION IF TROUBLE OR TEST CALL
MTPT, SRT, TKT, MLV, MOR, MIR, MOS, LIT
N
Y
TEST CALL GO TO VOL 3 J002
TVT, TLV
N
Y
TEST CALL GO TO VOL 4 R002
LVM
N
Y
CALLING LINE IDENTIFICATION RECORD SEE NOTES 1 & 3
MKR
Y
N
DR-, DRT-, FOR DIAL TONE MKR
N
Y
DETERMINE FROM OFFICE RECORDS WHICH MARKERS ARE DIAL TONE
DIAL TONE MARKER GO TO VOL 1 B002/E0
INTERMARKER GROUP CALL GO TO VOL 2 F002/C0
ITR
Y
N
NSI
N
Y
INTRAOFFICE CALL WITH SENDER (AMA) SEE NOTE 1
INTRAOFFICE CALL NO SENDER (NON AMA) GO TO VOL 2 E002/E0
PRETRANSLATOR GO TO VOL 1 B602
PRT
Y
N
A-, B-, C-, (IMG CODE)
Y
N
SON
N
NSO
Y
SOG
Y
N
SUBSCRIBER OUTGOING CALL WITH SENDER GO TO VOL 1 C002/C0
NO NSO OR SON
SUBSCRIBER OUTGOING CALL NO SENDER GO TO VOL 1 C702
TRANSVERTER SEE NOTE 1
TV
Y
N
TER
Y
N
A-G (SEVEN DIGIT)
Y
N
INTERMARKER GROUP CALL GO TO VOL 2 F003/C0
TERMINATING CALL GO TO VOL 1 D002/C0
AMA RECORDER SEE NOTE 1
REC
Y
N
NO NSO OR SON
N
SON
Y
N
NSO
Y
TOG
Y
N
TANDEM OUTGOING CALL WITH SENDER GO TO VOL 2 G002/D0
TANDEM OUTGOING CALL NO SENDER GO TO VOL 1 C701
MASTER TIMER SEE NOTE 1
TMG
Y
N
NO INDICATION OF TYPE OF CKT REQUESTING RECORD
RV
Y
N
REVERTING CALL GO TO VOL 1 C701
PCR PCD PCD1
Y
N
PULSE CONVERSION SEE NOTE 1
ROA
Y
N
RECORDER SEE NOTE 1
NO CLASS OF CALL INDICATION

SHEET NOTES:

1. INFORMATION TO BE COVERED IN A LATER ISSUE OF THIS SFD, OR IN ANOTHER SFD.
2. FOR OFFICES SHARING THE TROUBLE RECORDER WITH A CO-LOCATED ACD OFFICE, THE FOLLOWING MUST BE OBSERVED.
   - A-1 ACDO/MLV AND EITHER LVF OR LVM PERFORATED INDICATES A MARKER LINE VERIFICATION TEST CALL.
   - A-2 ACO/MLV PERFORATED WITHOUT LVF OR LVM INDICATES A TROUBLE RECORD FROM THE CO-LOCATED ACD OFFICE.
3. THE DESIGNATION LVM STANDS FOR LINE VERIFICATION MATCH IF THE MLV DESIGNATION IS PUNCHED INDICATING A LINE VERIFICATION TEST CALL. HOWEVER, LVM WITHOUT MLV IS USED TO INDICATE A CALLING LINE IDENTIFICATION CARD.

ISSUE 5	DWG SIZE 6S	SINGLE SIDED I/X TROUBLE CARD (E3638) FLOW CHART INDEX FOR ANALYSIS
SFD-10-01-	A206	BELL LABORATORIES

SINGLE SIDED I/X



NO.5 CROSSBAR SYSTEM
TROUBLE RECORDER CARD

TROUBLE INDICATION

TROUBLE LOCATION 2TR

TROUBLE FOUND OR ACTION TAKEN

CLEARED BY	TIME RECD.	DATE
	TIME CLRD	DATE
CLASS REPORT	TRBL CODE	
TICKET NO		

SEE CD-25805-01 FOR DESCRIPTION

🟥	TYPE OF CALL
🟥	SUB TYPE OF CALL
🟩	TYPE OF EQUIPMENT REQUESTING TROUBLE RECORD
🟨	CALLING LINE IDENTIFICATION
🟦	TEST CALLS

SFD-10-01-A207
6 SHEETS, SHEET 1

ISSUE
5

SINGLE SIDED I/X
TROUBLE CARD

SFD-10-01-A207

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

RELAYS

DESIG	CKT	LOC	EOPT LOC •
(XTA)	CM	F508/C5	C9L
A	CM	E316/C8	C28L
A	ITT	G115/B3	
A	IR	G115/E6	
A	ITT	G133/A3	
A	ITT	G135/B2	
A	CM	G511/D8	C28L
A	ITT	G816/B3	
A	IT	G817/B4	
A	IR	G817/E8	
A	ITT	G826/B3	
A	IT	G827/B4	
AB	IR	G108/C8	
AB	IR	G126/B9	
AB0-8	MTFC	E807/F6	
AB0-8	MTFC	F407/F6	
AB0-8	MTFC	G807/F6	
AC	IR	G138/F9	
ACC	IR	G133/F4	
ACC	IR	G134/E3	
ACV	JLK	E535/G9	
ACV1	JLK	E535/G9	
AC0,1,2,4,7	CM	E115/A4	T26R
AC0,1,2,4,7	CM	F210/A4	T26R
AC0,1,2,4,7	CM	F417/G8	T26R
AC0,1,2,4,7	CM	F515/B4	T26R
AC0,1,2,4,7	CM	G212/B4	T26R
AD	CM	F214/G4	C22L
ADVA	CM	E305/E4	P28
AK	CM	E316/D8	C28L
AK	CM	G511/D8	C28L
ALA	MTRC	E140/D6	
ALA	MTRC	G142/D6	
ALB	MTRC	E140/F6	
ALB	MTRC	G142/F6	
ALS0-5	CM	E305/B9-F9	P28
AL0-3	CM	E117/B8	T52L
AMA	OSC	F207/B2	
AMA	IMGS	F213/G9	
AMA	CM	F215/G0	T47R
AMA1-5	CM	F215/G0,H0	C13L,C24L
AMB	CM	E106/D5	C20R
AMB	CM	F506/D5	C20R
AMB	CM	G206/D5	C20R
AOA	CM	E410/F5	C27R
AOA	CM	E411/F5	C27R
AOC	CM	E410/E4	C25R
ARS	OS	G811/F1	
ARS	OS	G821/F1	
AR0,1,2,4,7	OS	G810/C1-E1	
AR0,1,2,4,7	OS	G820/C1-E1	
AS	TT	E532/B1	
AS	IR	G117/A4	
AS	OS	G811/F2	
AS	OS	G821/F2	
AS-LS	IR	G137/B3-B8	
ASB	CM	F207/E4	C18L
ASB	MTC	F207/G1	R12
AST	CM	E306/C9	T38R
AST	CM	G504/D9	T38R
ATC	OS	G815/C6	
ATC	OS	G824/B4	
ATC1	OS	G824/C4	
ATM	OS	G813/G2	
ATM	OS	G823/G6	
AT0	CM	E118/G7	T25R
AT1	CM	E118/F7	T25R
AT2	CM	E118/D7	T25R
AT9	CM	E118/C7	T25R
AV	IMGS	F206/G9	
AV	IMGS	F411/C3	
AVK	CM	F206/G4	C21L
AVK1	CM	F207/E7	C22L
A0-11	MTFC	E807/C4	
A0-11	MTFC	F407/C4	
A0-11	MTFC	G807/C4	
A0-7	OS	G213/A7-A8	
A0,1,2,4,7	OS	E133/A7	
A0,1,2,4,7	CM	E133/B5	T28R-T32R
A0,1,2,4,7	AMRST	E143/H0	Y41
A0,1,2,4,7	IMGS	F210/A8	
A0,1,2,4,7	CM	F210/B5	T28R-T32R
A0,1,2,4,7	IMGS	F410/C1	
A0,1,2,4,7	IMGS	F416/F5	
A0,1,2,4,7	CM	F416/G9	T28R-T32R
A0,1,2,4,7	CM	F515/B6	T28R-T32R
A0,1,2,4,7	IR	G117/G2	
A0,1,2,4,7	IR	G137/E2-G2	
A0,1,2,4,7	CM	G213/B3	T28R-T32R
A0,1,2,4,7	AMRST	G220/G0	Y41
A0,1,2,4,7	OS	G810/C3	
A0,1,2,4,7	OS	G820/C3	
B	ITT	G135/C3	
BAT	JLK	E106/E9	
BAT	JLK	F506/E9	
BAT	JLK	G206/E9	
BB	MTC	E142/B3	R8
BB	MTC	G219/B3	R8
BC0,1,2,4,7	CM	E115/B4	T27R
BC0,1,2,4,7	CM	F210/C4	T27R
BC0,1,2,4,7	CM	F417/G8	T27R
BC0,1,2,4,7	CM	F515/C4	T27R
BC0,1,2,4,7	CM	G212/C4	T27R
BC00	CM	E207/G1	C47R
BC10	CM	E207/G1	C50
BC20	CM	E207/G1	C50R
BD	OS	G825/B0	
BG	CM	E108/G3	C21L
BG	CM	F511/A5	C21L
BG	CM	G209/A5	C21L
BG	CM	G210/G3	C21L
BL	CM	E130/C3	T43R
BL	IR	G134/G7	
BLK	IR	G134/E7	
BN	CM	E317/D1	C31L
BN	CM	G512/D1	C31L
BNB	CM	E317/E8	C32L
BNB	CM	G512/E8	C32L
BNTH	CM	E309/E4	C31L
BNTH	CM	G508/E4	C31L
BRS	OS	G811/F1	
BRS	OS	G821/F1	
BR0,1,2,4,7	OS	G810/C2	
BR0,1,2,4,7	OS	G820/C2	
BS	IR	G117/A5	
BS	OS	G811/F3	
BS	OS	G821/F3	
BT	MTC	E107/C1	R4
BT	OR	E107/C7	
BT	AMRST	E517/D9	WR14
BT	MTC	F507/C1	R4
BT	MTC	G207/C1	R4
BT0R	CM	E119/E4	T18R
BT0S	CM	E119/C4	T18R
BT0T	CM	E119/A4	T18R
BT00	CM	E119/G4	T17R
BT1	AMRST	G121/G6	WR23
BT1R	CM	E119/E5	T18R
BT1S	CM	E119/C5	T18R
BT1T	CM	E119/A5	T18R
BT10	CM	E119/G5	T17R
BT2	AMRST	G120/H7	WR23
BT2R	CM	E119/E6	T18R
BT2S	CM	E119/C6	T18R
BT2T	CM	E119/A6	T18R
BT20	CM	E119/G6	T17R
BT9R	CM	E119/E8	T18R
BT9S	CM	E119/C8	T18R
BT9T	CM	E119/A7	T18R
BT90	CM	E119/G8	T17R
BX	CM	E109/D0	C4L
BX	CM	F511/E1	C4L
BX	CM	G119/D0	C4L
BX	CM	G209/E2	C4L
BY	ITT	G135/D2	
B0-9	MTFC	E807/C4	
B0-9	MTFC	F407/C4	
B0-9	MTFC	G807/C4	
B0,1,2,4,7	CM	E133/C5	T28R-T32R
B0,1,2,4,7	OS	E133/C7	
B0,1,2,4,7	AMRST	E143/H1	Y-48.5
B0,1,2,4,7	CM	F210/C5	T28R-T32R
B0,1,2,4,7	IMGS	F210/C8	
B0,1,2,4,7	IMGS	F410/C3	
B0,1,2,4,7	IMGS	F416/F5	
B0,1,2,4,7	CM	F416/G9	T28R-T32R
B0,1,2,4,7	CM	F515/C6	T28R-T32R
B0,1,2,4,7	IR	G117/G4	
B0,1,2,4,7	IR	G137/G3	
B0,1,2,4,7	CM	G213/C3	T28R-T32R
B0,1,2,4,7	OS	G213/C7	
B0,1,2,4,7	AMRST	G220/G1	Y-48.5
B0,1,2,4,7	OS	G810/C3	
B0,1,2,4,7	OS	G820/C3	
B1/B2	MFCS	G815/G2	
B147	CM	E119/D3	T27R
B258	CM	E119/E3	T27R
B369	CM	E119/D3	T27R
C	AMRST	G120/E3	WR27
C-	IRL	G138/B4	
CA	PC	E107/B7	
CA	PC	F507/B7	
CA	PC	G207/B6	
CA-	IRL	G138/C4	
CAA	CM	E117/B8	T43R
CAA	CM	E131/H7	T43R
CAU0-9	CM	E411/B5	C52R
CB	CM	E603/A4	C42L
CB-	PC	E105/B6-E8	
CB-	PC	F505/B6-E8	
CB-	PC	G205/A6-E8	
CBR1	AMRST	G120/E9	WR22
CB0	PC	E105/B3,E3	
CB0	PC	F505/B3,E3	
CB0	PC	G205/A3,E3	
CB1	CM	E603/A4	C42L
CB2	CM	E603/C8	C46L
CB3,4	CM	E603/D8	C44L
CB5,6	CM	E603/E8	C36R,C40L
CCT	JLK	E530/D2	
CCT	JLK	E535/G8	
CC0,1,2,4,7	CM	E115/B4	T27R
CC0,1,2,4,7	CM	F210/C4	T27R
CC0,1,2,4,7	CM	F417/G8	T27R
CC0,1,2,4,7	CM	F515/C4	T27R
CC0,1,2,4,7	CM	G212/C4	T27R
CGA	CM	E113/E4	T49L
CGB	CM	E113/F4	31
CGRA	CM	E113/E4	T44R
CGRB	CM	E113/F4	T44R
CGT	CM	E530/D4	C27R
CGT	JLK	E530/E2	
CH	PC	E206/C9	
CH	PCMB	E307/A4,E3	
CH	PCMB	E405/B3,E3	
CH	IA0	E711/E5	
CH	PCMB	G505/A4,E4	
CHA	CM	E525/A0	C31R
CHA1	CM	E525/A0	C28R
CHT	CM	E525/G6	C24R
CHT0	CM	E524/G2	C24R
CHT5	CM	E524/G6	C24R
CHT9	CM	E524/G9	C24R
CH0-9	CM	E525/A2-A7	C27R
CIC	MTFC	E807/C5	
CIC	MTFC	F407/C5	
CIC	MTFC	G807/C5	
CK	IR	G106/H7	
CK	IR	G112/G9	
CK	IR	G130/G9	
CK	IR	G134/H6	

• SHEET NOTES:

1. EXPLANATION OF EOPT LOC

CM SD-26002-01 COMPLETING MARKER CIRCUIT
C--L OR C--R LEFT OR RIGHT COMMON EOPT FRAME (CE)
T--L OR T--R LEFT OR RIGHT TRANSLATOR AND CODE TREATMENT FRAME (T&CT)
S-- SUPPLEMENTAL OR AUX SERV TREATMENT FRAME (SST) OR (AST)
RR-- ROUTE RELAY FRAME (RR)
F-- FC RELAY FRAME (FCR)
P-- PBX ALLOTTER FRAME (PBX ALLR)
CV-- CODE CONVERSION FRAME (CC)
REL R RELAY RACK FRAME (RR)
DTM SD-26001-01 DIAL TONE MARKER CIRCUIT
-- DIAL TONE MARKER FRAME (DTM)
S-- SUPPLEMENTARY DIAL TONE MARKER FRAME (SDTM)
MTC SD-25800-01 MASTER TEST CONTROL CIRCUIT
L-- OR R-- LEFT OR RIGHT MTF CONTROL FRAME (MTF CONT)

RELAY RACK MOUNTED EOPT
RR4 PAIRED LINE LINK CONTROL (RR)

APPARATUS INDEX
DWG SIZE C2
ISSUE 5
BELL LABORATORIES
SFD-10-B1
A501

PRINTED IN U.S.A.

RELAYS

DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *
CKG	MTC	G210/G0	R5	CS	ITT	G816/B3		DCT1	CM	F404/B9	C33R	ETS	CM	E209/F3	C41R	FMG0	CM	E207/B1	C46R
CKG1,2	CM	E108/H5	C35R,C36R	CS	OS	G821/F4		DCT1-3	CM	G804/C8-D8	C33R	ET0-2	CM	E118/D7-G7	T14+R	FMG10	CM	E207/B4	49
CKG1,2	CM	F405/B9	C35R,C36R	CS	ITT	G826/B3		DCT2	CM	E712/A4	C33R	ET9	CM	E118/C7	T14+R	FMG15	CM	E207/B6	C49R
CKG1,2	CM	F510/H5	C35R,C36R	CSK	MTC	E410/D0	R9	DC1	CM	E317/B1	C33R	EV	ALL	E409/C7		FMG20	CM	E207/B8	F2
CKG1,2	CM	G210/H5	C35R,C36R	CSK	MTC	E411/E0	R9	DIR1	AMRST	G120/E9	WR22	EVA	ALL	E409/G7		FMG25	CM	E207/B8	F2
CKG2	CM	G209/C2	C36R	CSK	CM	E411/E3	C12L	DISA	CM	E106/F2	C18R	EX	CM	E134/F5	C17R	FMG5	CM	E207/B3	C46R
CKG4	CM	E121/B1	C35R	CSK1	MTC	E410/C0	L45	DISA	CM	F506/E2	C18R	EXA	CM	E134/G3	C17R	FMK	CM	E207/G3	C45R
CKG4	CM	E207/F1	C35R	CSK1	MTC	E411/C0	L45	DISA	CM	G206/E2	C18R	EXB	MTFC	E134/A1,B1		FML	CM	E207/E6	C45R
CKG4	CM	F511/B2	C35R	CSRK	MTC	E410/E0	L45	DIS1,2	CM	E806/B8	22	EXG	MTFC	E134/A1		FMP	CM	E525/B8	C38R
CKG4	CM	G209/B2	C35R	CSRK	MTC	E411/F0	L45	DIS1,2	MTC	E806/F6,G7	22	EXR	P-REG	E134/H5		FM0-4	CM	E207/B1-B6	C45R
CKG5,6	CM	E108/H5	C36R,C35R	CST0-9	CM	E411/C5	C11L,C12L	DIS1,2	MTC	F405/F6,G7	22	E0	CM	F205/C6,E6	T28R	FS	OS	G811/F5	
CKG5,6	CM	F510/H5	C36R,C35R	CSU0-9	CM	E411/D5	C11L,C12L	DIS1,2	CM	G805/B8	22	E0-2	MTFC	E807/C4		FS	OS	G821/F5	
CKG5,6	CM	F511/D1	C36R,C35R	CTA0-9	CM	E113/A4	T48L	DIS1,2	MTC	G805/F7	22	E0-2	MTFC	F407/C4		FS-LS	IR	G117/A8	
CKG5,6	CM	G209/C2,D2	C36R,C35R	CTB0,1,2	CM	E113/A6	T49L	DL	CM	E807/F8	C18R	E0-2	MTFC	G807/C4		FSA	CM	E121/F1	C45R
CKG5,6	CM	G210/H5	C36R,C35R	CT0,1,2	CM	E113/A4	T48L	DL	CM	F407/F8	C18R	E0,1,2,4,7	CM	E133/D5	T28R-T32R	FSA	CM	E207/F6	C45R
CKG8	CM	E121/B1	C31R	CT0,1,2,4,7	CM	E113/A4	T48L	DL	CM	G807/E8	C18R	E0,1,2,4,7	OS	E133/D7		FSA	CM	F511/A0	C45R
CKG8	CM	E207/F1	C31R	CT1-4	MTC	E530/A1,B1	R42	DLP	CM	E117/E4	T46R	E0,1,2,4,7	AMRST	E143/H3	Y45	FSA	CM	G209/A1	C35R
CKR	CM	E317/F8	C30L	CUA0,1,2,4,7	CM	E113/B4	T48L	DLS	CM	E117/E4	T46R	E0,1,2,4,7	IMGS	F210/D8		FS0-2	MTC	E204/F5,F6	R35
CKR	CM	G512/F8	C30L	CUB0,1,2,4,7	CM	E113/B4	T49L	DL0-6	CM	E117/E4	T46R	E0,1,2,4,7	CM	F210/E5	T28R-T32R	FS0-9	CM	E205/B1-B4	C46R
CK0	CM	E317/C8	C30L	CV00-95	CM	E117/B8	CV23	DP	CM	E111/C5	T40R	E0,1,2,4,7	IMGS	F410/C6		FS10-19	CM	E205/B5-B8	C49R
CK0	CM	G512/C8	C30L	CWA	MTRC	E108/B7		DP	IR	G134/F7		E0,1,2,4,7	IMGS	F416/F5		FS20-29	CM	E205/E1-E4	F2
CK1	MTC	G814/B1	R43	CWA	MTRC	E140/D4		DP	IR	G827/F4		E0,1,2,4,7	CM	F416/G9	T28R-T32R	FT(A,B)0-3	CM	G510/A4	C11R,C40L
CK2	SR	G116/G7		CWA	MTRC	F510/B7		DRR0,1	CM	E117/B8	T5+R	E0,1,2,4,7	CM	F417/G8	T28R-T32R	FT(A,B)4,5	CM	G510/B4	C11R
CK2	MTC	G814/B2	R44	CWA	MTRC	G142/D4		DR0	CM	E127/B7	T42R	E0,1,2,4,7	CM	F515/E4	T28R-T32R	FTA0	CM	E603/A3	C11R
CK3	SR	G116/G4		CWA	MTRC	G210/B7		DR0-19	CM	E117/B8	T42R,T8R	E0,1,2,4,7	IR	G117/G5		FTA0-5	CM	E315/A3,B3	C11R
CLG	CM	E212/B1	C20L	CWB	MTRC	E108/B8		DR1	CM	E127/D8	T42R	E0,1,2,4,7	IR	G137/G5		FTA5	CM	E603/B3	C11R
CLK	CM	E212/E1	C20L	CWB	MTRC	E140/F4		DR2	CM	E127/D9	T42R	E0,1,2,4,7	CM	G213/D3	T28R-T32R	FTB0	CM	E603/A3	C40L
CLP	CM	E117/F4	T45L	CWB	MTRC	F510/B8		DR3	CM	E132/A7	T42R	E0,1,2,4,7	OS	G213/D7		FTB0-5	CM	E315/A3,B3	C40L
CLS	CM	E117/F4	T45L	CWB	MTRC	G142/F4		DS	IR	G117/A6		E0,1,2,4,7	AMRST	G220/G4	Y-45	FTB5	CM	E603/B3	C11R
CLS	IR	G108/D8		CWB	MTRC	G210/B8		DS	OS	G811/F4		E0,1,2,4,7	OS	G810/C4		FTCK	CM	E207/D3	C44R
CLS	IR	G126/C9		C0	IRL	G106/E2,E7		DS	OS	G821/F4		E0,1,2,4,7	OS	G820/C4		FTCK1	CM	E205/E0	C44R
CLS1	IR	G126/D9		C0-7	MTFC	E807/C4		DSM	AMRST	G814/A7	Y-31	E1/F1/E2/F2	MFCS	G815/F2		FTC0-19	CM	E117/B1	C48R,C51R
CLT	CM	E212/C3	C20L	C0-7	MTFC	F407/C4		DT	LL	E604/B4		F	OGT	E209/D9		FTC0-9	CM	E204/D0-D2	C48R
CLT	IR	G108/D8		C0-7	MTFC	G807/C4		DTK	DTM	E604/E8		F	IAO	E209/F9		FTC10-19	CM	E204/D3-D5	C51R
CLT	IR	G126/E9		C0,1,2,4,7	CM	E133/C5	T28R-T32R	DTK	CM	E604/F2	C32R	FA	CM	E106/B7	C20R	FTC20-29	CM	E117/B1	F4
CLT1	CM	E212/C1	C20L	C0,1,2,4,7	OS	E133/C7		DVA	CM	E530/B9	C30R	FA	CM	F506/B7	C20R	FTC20-29	CM	E204/D7-D9	F4
CLT2	CM	E212/B1	C20L	C0,1,2,4,7	AMRST	E143/H2	Y-43	DVO	CM	E530/A9	C28R	FA	CM	G206/B7	C20R	FTK	MTC	E314/A3	R9
CL0-9	CM	E117/F4	T45R,T5+R	C0,1,2,4,7	IMGS	F210/C8		D0,1	MTFC	E807/C4		FA--	TL	E211/B8		FTK1	CM	E315/H6	C46L
CL1	IR	G126/B9		C0,1,2,4,7	CM	F210/D5	T28R-T32R	D0,1	MTFC	F407/C4		FA--	TL	E533/B8		FTK1	CM	E603/H6	C46L
CMR0,1	CM	E117/B8	T9R	C0,1,2,4,7	IMGS	F410/C4		D0,1	MTFC	G807/C4		FA--	TL	E711/D7		FTK1	CM	G510/H6	C46L
CM	CM	E410/D4	C25R	C0,1,2,4,7	IMGS	F416/F5		D0,1 2,4,7	AMRST	G220/G3	Y-44	FAC	CM	E110/C4	T51L	FTL	CM	E315/B4	C30L
CMA	CM	E410/F5	C27R	C0,1,2,4,7	CM	F416/G9	T28R-T32R	D0,1,2,4,7	CM	E133/D5	T28R-T32R	FAK	CM	E211/C4	C31R	FTL	CM	E603/B4	C30L
CMA	CM	E411/F5	C27R	C0,1,2,4,7	CM	F515/D6	T28R-T32R	D0,1,2,4,7	OS	E133/D7		FA1	CM	E106/C6	C20R	FTL	CM	G510/B4	C30L
CMR	MTC	E112/F1	R43	C0,1,2,4,7	IR	G117/G4		D0,1,2,4,7	AMRST	E143/H3	Y-44	FA1	CM	F506/C6	C20R	FTN0-5	CM	E312/A8,B8	C47L
COF	OS	G820/G1		C0,1,2,4,7	IR	G137/G4		D0,1,2,4,7	CM	F210/D5	T28R-T32R	FA1	CM	G206/C6	C20R	FTN0-5	CM	G509/B8	C47L
CON	MTC	E530/C0	R42	C0,1,2,4,7	CM	G213/C3	T28R-T32R	D0,1,2,4,7	IMGS	F210/D8		FB--	TL	E211/B8,C8		FTTB	CM	E316/B8	C40L
CON	CM	E535/D9	C26R	C0,1,2,4,7	OS	G213/C7		D0,1,2,4,7	IMGS	F410/C5		FB--	TL	E533/A8		FTTB	CM	G511/B8	C40L
CONA	CM	E530/A6	C26R	C0,1,2,4,7	AMRST	G220/G2	Y-43	D0,1,2,4,7	IMGS	F416/F5		FBK	CM	E211/C4	C31R	FTT0-5	CM	E315/A3,B3	C41L,C12R
CONT	PRF	E807/C2		C0,1,2,4,7	OS	G810/C4		D0,1,2,4,7	CM	F416/G9	T28R-T32R	FB0-9	CM	E204/C1-C3	C31R	FTT0-5	CM	E603/A2,B2	C41L,C12R
CONT	PRF	F407/C2		C0,1,2,4,7	OS	G820/C3		D0,1,2,4,7	CM	F417/G8	T28R-T32R	FB10-19	CM	E204/C5-C6	C50R	FTT0-5	CM	G510/A3,B3	C41L,C12R
CON1	CM	E530/C4	C26R	C3	IRL	G107/B2,B7		D0,1,2,4,7	CM	F515/D4	T28R-T32R	FB20-29	CM	E204/C8,C9	F3	FT0-3	CM	E114/B3	C42L
CPK1	CM	F212/A1	T49R	D	OGT	E209/C9		D0,1,2,4,7	IR	G117/G4		FC	PC	E108/B9		FT0-3	OS	E114/B8	
CPK2	CM	F212/C1	T49R	D	IMGS	F208/E8		D0,1,2,4,7	IR	G137/G4		FC	PC	E140/B3		FUK	MTC	E314/B3	R9
CPP	CM	E117/D4	T49R	D	IMGS	F209/E8		D0,1,2,4,7	CM	G213/D3	T28R-T32R	FC	PC	F510/B9		FUL	CM	E315/C4	C30L
CPS	CM	E117/E4	T49R	D	IMGS	F414/C8		D0,1,2,4,7	OS	G213/D7		FC	PC	G142/B3		FUL	CM	E603/C3	C30L
CP0-10	CM	E117/D4	T50R,REL R	D	IMGS	F415/C8		D0,1,2,4,7	OS	G810/C4		FC	PC	G210/B9		FUL	CM	G510/C4	C30L
CP0,1,2,4,7	IMGS	F212/C9		D	IMGS	F416/E1		D0,1,2,4,7	OS	G820/C4		FC-	CM	E117/A3	F14-S5	FUN0-9	CM	E312/C8	C47L
CR	CM	E112/E4	T40R	D	OGT	G114/D6		E-	PC	E206/A8,C8,E8		FCG	CM	E535/D6	C25R	FUN0-9	CM	G509/C8	C47L
CRP	CM	E117/D4	T44R	D	OGT	G132/C5		E-	PCMB	E307/B2-F8		FC1	PC	E108/B8		FUT0-9	MTFC	E315/B1,C1	
CRS	CM	E117/D4	T44R	D	ITT	G135/B1		E-	PCMB	E405/C1-F8		FC1	PC	E140/C3		FUT0-9	CM	E315/B3,C3	C41L
CRS	OS	G811/F2		D	ITT	G139/A0,C0		E-	CM	F205/C8		FC1	PC	F510/B8		FUT0-9	CM	E603/B2,C2	C41L
CRS	OS	G821/F2		DAR	OS	G812/F1		E-	PCMB	G505/B2-F8		FC1	PC	G142/C3		FUT0-9	MTFC	G510/B1,C1	
CRU0,1,2,4,7	CM	E113/D4	T44R	DAR	OS	G822/F1		ECN	CM	F507/D3	T38R	FC1	PC	G210/C8		FUT0-9	CM	G510/B3,C3	C41L
CR0-4	CM	E117/D4	T44R	DBR	OS	G812/E4		ECN	CM	G207/E3	T38R	FG0-2	CM	E2[illegible]/F6	C43R	FU0,1,2,4,7	CM	E114/C3	C42L
CR0,1,2,4,7	OS	G810/C2		DBR	OS	G822/E3		EF	TL	E520/G0		FG0-2	CM	F417/D[illegible]	C43R	FU0,1,2,4,7	OS	E114/C8	
CR0,1,2,4,7	OS	G820/C2		DCI	CM	G512/B1	C33R	EL	TL	E520/C0		FG0-2	CM	F513/A6,B6	C43R	FVD	CM	G208/D5	T26R
CR4	OR	E112/F8		DCK	IR	G104/H8		ELT	CM	E110/D5	T26R	FG0-2	IR	G109/F7,G7		F0,1 2,4,7	AMRST	G220/G4	Y-46
CR5	CM	E117/D4	T44R	DCK	CM	G118/B7	C17R	EN	CM	E309/D4	T39R	FG0-2	IR	G127/F7,G7		F0,1,2,4,7	CM	E133/E5	T28R-T32R
CS	IAO	E710/D7		DCK	IR	G134/H7		EN	CM	G508/D4	T39R	FG0-2	CM	G211/B2,C2	C43R	F0,1,2,4,7	OS	E133/E7	
CS	IMGT	F417/B1		DCR	OS	G812/E6		EP	PCMB	E405/C9,F9		FG0.1	CM	F512/A6,B6	C43R	F0,1,2,4,7	AMRST	E143/H4	Y-46
CS	OGT	G114/B6		DCR	OS	G822/E5		EP	OS	G815/E6		FLG,1	CM	E108/G0,G1	C35R	F0,1,2,4,7	CM	F210/E5	T28R-T32R
CS	ITT	G115/B3		DCT	CM	E533/D4	C29R	EP	OS	G824/E8		FLG,1	CM	F511/F8	C35R	F0,1,2,4,7	IMGS	F210/E8	
CS	IR	G117/A6		DCT	CM	E534/D8	C29R	ER	TL	E520/A0		FLG,1	CM	G209/F8	C35R	F0,1,2,4,7	IMGS	F410/C7	
CS	OGT	G132/B5		DCT	MTC	E712/G2	R3	ES	IR	G117/A7		FM	CM	E517/A6	C38R	F0,1,2,4,7	IMGS	F416/F5	
CS	ITT	G133/A3		DCT	MTC	F404/G2	R3	ES	OS	G811/F5		FM	CM	E525/D2	C38R	F0,1,2,4,7	CM	F416/G9	T28R-T32R
CS	ITT	G135/B4		DCT	MTC	G804/G2	R3	ES	OS	G821/F5		FMG	CM	E121/A0	C45R	F0,1,2,4,7	CM	F417/G8	T28R-T32R
CS	OS	G811/F3		DCT1	CM	E712/B9	C33R	ET	CM	G208/A5	T14+R	FMG	CM	E207/E0	C45R	F0,1,2,4,7	CM	F515/E4	T28R-T32R

* FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET AS01.

ISSUE	DWG SIZE	APPARATUS INDEX
5	C2	
A502	SFD-10-01	BELL LABORATORIES

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RELAYS

DESIG	CKT	LOC	EQPT LOC *
F0,1,2,4,7	IR	G117/G5	
F0,1,2,4,7	IR	G137/G6	
F0,1,2,4,7	CM	G213/E3	T28R-T32R
F0,1,2,4,7	OS	G213/E7	
F0,1,2,4,7	OS	G810/C5	
F0,1,2,4,7	OS	G820/C5	
F1	MTC	E532/E5	R40
F1	IMGT	F208/F2	
F1	IMGT	F209/F3	
F1	IMGT	F414/C2	
F1	IMGT	F415/A2	
F1	IMGT	F417/D0	
F7	CM	E133/E5	T28R
F7	CM	G213/E3	T28R
GB	CM	E3[illegible]/A5	C27L
GB	CM	G507/A5	C27L
GBA	CM	F205/B3	C18L
GBB	CM	F205/H3	C18L
GC	CM	E525/D9	C38L
GCA	CM	E525/E9	C11R
GLH	CM	E530/A5	C26R
GLH1	CM	E530/A7	C26R
GS	OS	G811/F6	
GS	OS	G821/F6	
GSA1-5	CM	E519/A2-D2	C47R
GSA11-14	CM	E519/A3-D3	C50R,C51R
GSA21-25	CM	E519/A3-D3	F3,4
GS1-5	CM	E519/A1-D1	C38R
GT	PC	E107/C6	
GT	CM	E535/F4	C25R
GT	PC	F507/C6	
GT	PC	G207/C6	
GTA	CM	E530/F5	C26R
GTK	CM	E530/B7	C27R
GTL	CM	E605/A1	C23L
GTL	CM	F215/C0	C23L
GTL2	CM	F215/C0	C45L
GT1	CM	E531/C6	C26R
GT2	CM	E530/B3	C26R
GT2	CM	E605/91	C26R
GT3	CM	E108/A4	C26R
GT3	CM	E530/G4	C26R
GT5	CM	E530/F7	C26R
G0	TLC	E510/A0	
G0,1,2,4,7	CM	E133/F5	T28R-T32R
G0,1,2,4,7	OS	E133/F7	
G0,1,2,4,7	AMRST	E143/H5	Y-47
G0,1,2,4,7	IMGS	F210/E8	
G0,1,2,4,7	CM	F210/F5	T28R-T32R
G0,1,2,4,7	IMGS	F410/C8	
G0,1,2,4,7	IMGS	F416/F5	
G0,1,2,4,7	CM	F416/G9	T28R-T32R
G0,1,2,4,7	CM	F417/G8	T28R-T32R
G0,1,2,4,7	CM	F515/F4	T28R-T32R
G0,1,2,4,7	IR	G117/G6	
G0,1,2,4,7	IR	G137/G6	
G0,1,2,4,7	CM	G213/E3	T28R-T32R
G0,1,2,4,7	OS	G213/E7	
G0,1,2,4,7	AMRST	G220/G5	Y-47
G0,1,2,4,7	OS	G810/C5	
G0,1,2,4,7	OS	G820/C5	
G1-4	TLC	E510/B0-D0	
H	IR	G104/H7	
H	IR	G134/G7	
H-	CM	E133/G5	T28R-T32R
H-	CM	G213/E3	T28R-T32R
HB0-9	MG	E308/B7	
HB0-9	MG	G506/B7	
HFA	CM	E106/A7	C20R
HFA	CM	F506/A7	C20R
HFA	CM	G206/A7	C20R
HGA0-9	LL	E407/D3	
HGA0-9	LL	E409/G3	
HGB0-9	LL	E407/D3	
HGB0-9	LL	E409/G3	
HGG	DTM	E604/F6	37
HGK	MTC	E314/E3	R9
HGK	CM	E407/E5	C31R
HGK	CM	E409/E0	C31R
HGK	MTC	E532/H5	R9
HGL	CM	E315/F4	C30L
HGL	CM	E603/F3	C30L
HGL	CM	G510/F4	C30L
HGN0-9	CM	E312/C8	C50L
HGN0-9	CM	G509/C8	C50L
HGT0-9	MTFC	E315/E1	
HGT0-9	CM	E315/E3	C45L
HGT0-9	CM	E603/E2	C45L
HGT0-9	MTFC	G510/E1	
HGT0-9	CM	G510/E3	C45L
HG0,1,2,4,7	CM	E114/E3	C44L
HG0,1,2,4,7	OS	E114/E8	
HMS1	CM	E531/A6	C30R
HMS1	MTC	E535/G3	R42
HMT	CM	E530/C5	C28R
HMT1	CM	E530/E7	C28R
HN0,1,2,4,7	CM	E133/G3	T34R
HN0,1,2,4,7	CM	F210/H5	T34R
HN0,1,2,4,7	CM	F515/G5	T34R
HN0,1,2,4,7	CM	G214/B5-D5	T34R
HN0,1,2,4,7	CM	G216/B5-C5	T34R
HS	OS	G811/F6	
HS	OS	G821/F6	
HTK	DTM	E604/G8	37
HTK1	CM	E315/H6	C45L
HTK1	CM	E603/H6	C45L
HTK1	CM	G510/G6	C45L
HTR	CM	E131/C8	C27R
HTR	CM	E135/E3	C27R
HTT	CM	E135/F8	C15R
HTUK	CM	E309/G4	C31L
HTUK	CM	G508/G4	C31L
H0-9	LL	E409/A5,G5	
H0-9	ALL	E409/A9,G9	
H0,1 2,4,7	AMRST	G220/G6	Y-48
H0,1,2,4,7	OS	E133/F7	
H0,1,2,4,7	AMRST	E143/H6	Y-48
H0,1,2,4,7	IR	G117/G6	
H0,1,2,4,7	IR	G137/G7	
H0,1,2,4,7	OS	G213/F7	
H0,1,2,4,7	OS	G810/C6	
H0,1,2,4,7	OS	G820/C6	
H7	CM	F210/F5	T32R
H7	IMGS	F210/F8	
H7	IMGS	F410/C9	
H7	IMGS	F416/F5	
H7	CM	F416/G9	T32R
H7	CM	F417/G8	T32R
H7	CM	F515/F4	T32R
IM	PC	E108/C9	
IM	MTRC	E108/D7	
IM	PC	E140/G2	
IM	MTRC	E140/G6	
IM	PC	F510/C9	
IM	MTRC	F510/D7	
IM	PC	G142/G2	
IM	MTRC	G142/G6	
IM	PC	G210/C9	
IM	MTRC	G210/D7	
IMG	CM	F207/G5	C23L
INC	CM	F508/D5	T51L
INC	CM	G208/F5	T51L
INT	PRF	E807/C2	
INT	PRF	F407/C2	
IPC0-9	CM	E117/B8	T11+R
IRB-	AMRST	G121/C5,D5	WR40,RR1
IRB0	AMRST	G121/B5	WR41
IRP-	AMRST	G121/C5,D5	WR40,RR1
IRP0	AMRST	G121/B5	WR41
IRST	AMRST	G120/F0	WR27
ITRA	CM	E117/B8	T41R
ITR1,2	CM	E108/A3	C34R
ITR1,2	CM	G210/A3	C34R
J-	CM	E133/G5	T28R-T32R
J-	CM	G213/E3	T28R-T32R
JCA0-9	TL	E521/D0	
JCB0-9	TL	E521/E0	
JCK	CM	E527/H1	C31R
JCK	CM	E528/E0	C31R
JCX0-9	TL	E521/E0	
JC0-29	TL	E521/A0-D0	
JGCK	CM	E533/D6	C29R
JG0-3	CM	E509/B1-G1	C38L
JG1-4	CM	E508/C1-E1	C38L
JHM	MTC	E533/H5	R39
JLE	CM	E507/C6	C36L
JLO	CM	E507/C6	C36L
J0,1,2,4,7	AMRST	G220/G7	Y-49
JS	OS	G811/F7	
JS	OS	G821/F7	
JSA	TL	E520/I0	
JSB	TL	E520/E0	
JSE	CM	E507/D6	C36L
JS00	CM	E507/A3	C36L
JS01-5	CM	E507/B3-D3	C36L
JSX	TL	E520/E0	
JSXA	TL	E520/F0	
JS0	CM	E507/D6	C36L
JS0	CM	E508/B1	C36L
JXP	CM	E533/F6	C29R
JXPA	CM	E531/D3	C30R
JXP1	CM	E531/C3	C30R
J0,1,2,4,7	OS	E133/F7	
J0,1,2,4,7	AMRST	E143/H7	Y-49
J0,1,2,4,7	IR	G117/G6	
J0,1,2,4,7	IR	G137/G8	
J0,1,2,4,7	OS	G213/F7	
J0,1,2,4,7	OS	G810/C6	
J0,1,2,4,7	OS	G820/C6	
K	MTC	E142/A3	R8
K	MTC	F515/G0	R8
K	MTC	G219/A3	R8
K-	CM	E133/G5	T28R-T32R
K-	CM	G213 E3	T28R-T32R
KA	MTC	E115/A0	R8
KA	CM	F211/F5	T29R
KA	MTC	F515/B0	R8
KA-KL	MTC	G212/B0-G0	R8
KB	MTC	E115/B0	R8
KB	MTC	F515/C0	R8
KBC	CM	F211/F5	T30R
KBC	MTC	F515/C0	T30R
KC	MTC	E115/B0	R8
KCH	MTC	E507/G0	R35
KCH	MTC	E522/F1	R35
KCS3	MTC	E111/F2	R10
KCS6	MTC	E111/F2	L45
KD	MTC	E115/C0	R8
KD	MTC	F515/D0	R8
KDE	CM	F211/F5	T29R
KE	MTC	E115/C0	R8
KE	MTC	F515/E0	R8
KF	MTC	E115/D0	R8
KF	MTC	F515/E0	R8
KFG	CM	F211/G5	T30R
KFS	MTC	E204/G4	R36
KG	MTC	E115/D0	R8
KG	CM	F211/D5	T28R
KG	MTC	F515/F0	R8
KH	MTC	E115/E0	R8
KHJ	CM	F211/G5	R11
KJ	MTC	E115/E0	R8
KJSO	MTC	E507/G1	R35
KK	MTC	E115/F0	R8
KK	CM	F211/D7	T28R
KL	MTC	E115/F0	R8
KMT9	MTC	E204/H2	R36
KOR	MTC	E110/E2	R43
KOS	MTC	F204/A0	R12
KOSA	MTC	F204/A2	R12
KP	SR	G116/G5	
KP	OS	G811/F0	
KP1,2	SR	G116/H8	
KRA	MTC	E516/B6	R36
KRS	MTC	E536/G2	R36
KS	OS	G811/F7	
KS	OS	G821/F7	
KTF	MTC	F512/G8	R36
KTF	MTC	F513/G7	R36
KTF	MTC	G211/H3	R36
KTN	CM	G209/F5	
KTN1	CM	G209/F5	
K0,1,2,4,7	OS	E133/G7	
K0,1,2,4,7	AMRST	E143/H7	Y-50
K0,1,2,4,7	IR	G117/G6	
K0,1,2,4,7	IR	G137/G8	
K0,1,2,4,7	OS	G213/F7	
K0,1,2,4,7	AMRST	G220/G7	Y-50
K0,1,2,4,7	OS	G810/C7	
K0,1,2,4,7	OS	G820/C7	
K1	MTC	F515/H0	R7
K1-3	MTC	E142/E3	R7
K1,2	MTC	G219/E3	R7
K3	MTC	F515/H0	R7
L	OR	E108/D7	
L	TL	E520/C0	
L	IR	G133/E5	
L	IR	G134/D1	
L	IR	G827/E6	
L-	CM	E133/G5	T28R-T32R
L-	LL	E710/C2,F2	
L-	LL	F416/C2	
L-	LL	F417/C6	
L-	LL	G135/C4	
L-	CM	G213 E3	T28R-T32R
L-	LL	G816/C4	
L-	LL	G826/C4	
LA	CM	E315/B8	C30L
LA	TL	E520/B0	
LA	CM	E603/A8	C30L
LA	CM	G510/B8	C30L
LB	TL	E520/B0	
LB	CM	E531/G6	C32L
LBT	CM	E533/F0	C29R
LBT	CM	E534/D3	C29R
LBTA	CM	E531/E6	C31R
LC	MTC	E211/B1	R39
LC	MTC	E528/H7	R39
LC	MTC	E529/A7	R39
LCH	CM	E108/E2	C32L
LCH	PRF	E807/D3	
LCH	PRF	F407/D3	
LCH	PRF	G807/D3	
LCK	CM	E211/B4	C31R
LCK	CM	E528/G7	C31R
LCK	CM	E529/G7	C31R
LC0-9	TL	E211/A8	
LC0-9	TL	E528/C8-E8	
LC0-9	TL	E529/C8-E8	
LD	OS	G810/G1	
LDT	CM	E134/F9	C16R
LEA	CM	117/B8	T38R
LEA	CM	F514/C5	T38R
LEB	CM	E117/B8	T39R
LEB	CM	F514/E5	T39R
LF	ITT	G115/D1	
LF	ITT	G133/D2	
LF	ITT	G135/D4	
LFK	CM	E407/A7	C32R
LFK	CM	E408/C2,E2	C32R
LFKA	CM	E408/B2,D2	C7L
LFT0-5	MTC	E408/G9	RR4
LGT	CM	E316/B1	C27R
LGT	CM	G511/B1	C27R
LG00-11	LL	E407/A1,B1	
LHM	RTC	E532/E2	R40
LHMA	MTC	E532/D2	R40
LHMT	MTC	E532/E5	L45
LHT	CM	E531/D6	C46L
LHT	CM	F511/C5	C46L
LHT	CM	G209/C5	C46L
LI	CM	E531/E6	R10
LIT	CM	E533/F0	C29R
LIT	CM	E534/D3	C29R
LK	CM	E520/D3	23
LK	AMRST	G104/G0	WR27
LK	SR	G116/A9	
LK1	CM	E712/C5	C33R
LK1	MTC	E712/F5	R40
LK1	CM	F404/C5	C33R
LK1	MTC	F404/F5	R40
LK1	CM	G804/D5	C33R
LK1	MTC	G804/F5	R40
LK2	CM	E712/C5	C33R
LK2	MTC	E806/F1	R3
LK2	MTC	F405/F1	R3
LK2	MTC	G805/F1	R3
LLB	CM	E405/H1,H3	C32R
LLC1	CM	E121/C1	C32R
LLC1	CM	E207/E6	C32R
LLC1	CM	F511/B9	C32R
LLC1	CM	G209/B8	C32R
LLC2,3	CM	E121/E1	C38L,C30R
LLC2,3	CM	E207/H5	C38L,C30R
LLC2,3	CM	F511/C8	C38L,C30R
LLC2,3	CM	G209/C8	C38L,C30R
LLI	CM	E306/E4	C30L
LLI	CM	G504/E3	C30L
LLJ	MTC	E533/G4	L45
LLT	CM	E524/G2	C29R
LLTA	CM	E524/H2	C30R
LL0,1,2,4,7	CM	E111/F5	REL R
LOT	CM	E604/G1	C32R
LOT1	CM	E604/F3	T38R
LPA	CM	E117/B8	T38R
LPA	CM	E126/A2	T38R
LPA	CM	E131/F1	T38R
LPA	CM	F514/B5	T38R
LPB	CM	E117/B8	T39R
LPB	CM	E126/B2	T39R
LPB	CM	E131/F1	T39R
LPB	CM	F514/D5	T39R
LR	IMGS	F208/C8	
LR	IMGS	F209/C8	
LR	IMGS	F411/A3	
LR	IR	G118/B2	
LR	CM	G118/C7	C17R
LR	IR	G138/B9	
LS	OS	G811/F8	
LS	OS	G821/F8	
LST	IMGS	F212/F9	
LT	CM	E110/D5	T26R
LT	CM	F508/C5	T26R
LT	CM	G208/E5	T26R
LTA	CM	E117/B8	T38R
LTA	CM	F514/C5	T38R
LTB	CM	E117/B8	T39R
LTB	CM	F514/E5	T39R
LTR	CM	E531/B6	C27R
LT0-9	IR	G111/A6-G9	
LT0-9	IR	G128/A6-G6	
LUT	IR	G110/F6	
LUT	IR	G129/F6	
LU0-9	ALL	E409/C6-E6	
LU0,1,2,4,7	IR	G110/C6-E6	
LU0,1,2,4,7	IR	G129/C6-E6	
LV0-9	TL	E211/E8	
LV2-9	TL	E211/E8	
LX	TL	E520/C0	
LXP	CM	E533/F1	C29R
LXP	CM	E534/F4	C29R
LXPA	CM	E531/D6	C30R
LXP1	CM	E531/C6	C30R
L0	LL	E604/B4	
L0-4	LL	G114/D2	

* FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

APPARATUS INDEX	DWG SIZE C2	ISSUE 5
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RELAYS

DESIG	CKT	LOC	EQPT LOC •
LO-4	LL	G115/C4	
LO-4	LL	G132/C1	
LO-4	LL	G133/C4	
LO-4	LL	G817/D7	
LO-4	LL	G827/D7	
L0,1,2,4,7	OS	E133/G7	
L0,1,2,4,7	AMRST	E143/H8	Y51
L0,1,2,4,7	IR	G117/G6	
L0,1,2,4,7	IR	G137/G9	
L0,1,2,4,7	OS	G213/G7	
L0,1,2,4,7	AMRST	G220/G8	Y51
L0,1,2,4,7	OS	G810/C7	
L0,1,2,4,7	OS	G820/C7	
LSD	IMGS	F212/F9	
M	TLC	E206/A3	
MA	ORMC	E105/B1	
MA	IRMC	E105/F1	
MA	ORMC	F505/B1	
MA	IRMC	F505/F0	
MA	ORMC	G205/B1	
MA	IRMC	G205/E1	
MAK	CM	E105/H2-H8	C20R
MAK	CM	F505/H2-H8	C20R
MAK	CM	G205/G2-G8	C20R
MAK1	CM	E204/C0	C44R
MAK1	CM	E206/B0	C44R
MA1-	CM	E405/D0-G2	
MA1-	LLC	E405/D0-G7	
MA1-	OSC	F207/B5	
MA1,2	TLC	E206/A2,A3	
MA2-	LLC	E404/A7-G7	
MA2-	OSC	F207/B5	
MB	ORMC	E105/B0	
MB	IRMC	E105/F0	
MB	CM	E106/C2	C20R
MB	PCMB	E306/F0	
MB	IMGS	F207/F3	
MB	IMGS	F413/C6	
MB	ORMC	F505/B0	
MB	IRMC	F505/F0	
MB	CM	F506/C2	C20R
MB	IR	G118/G4	
MB	ORMC	G205/B0	
MB	IRMC	G205/F0	
MB	CM	G206/C3	C20R
MB	PCMB	G504/F0	
MBK	CM	F213/D6	T48R
MBK1,2	CM	F213/C2	T48R
MBK3-5	CM	F213/E4-H4	T47R
MBS0	CM	E127/C8	T48R
MBS0-9	CM	E117/B8	T48R
MBS1	CM	E126/D9	T48R
MBS1	CM	E127/C8	T48R
MBS2	CM	E127/C9	T48R
MBS9	CM	E127/A9	T48R
MB0,1,2,4,7	IMGS	F213/B9	
MB1-	LLC	E404/A7-G7	
MB1-	OSC	F207/B4	
MB1,2	TLC	E206/A1,A2	
MB2-	LLC	E404/A7-G7	
MB2-	OSC	F207/B4	
MC	ORMC	E105/B0	
MC	IRMC	E105/F0	
MC	MTC	E507/A0	R3
MC	TRC	E807/D0	
MC	TRC	F407/D0	
MC	ORMC	F505/B0	
MC	IRMC	F505/F0	
MC	ORMC	G205/B0	
MC	IRMC	G205/F0	
MC	TRC	G807/D0	
MCA-	CM	E307/C0-G6	
MCA-	NGC	E307/C0-G6	
MCA-	CM	G505/C0-G6	
MCA-	NGC	G505/C0-G6	
MCB-	NGC	E306/A1	
MCB-	NGC	G504/B1	

DESIG	CKT	LOC	EQPT LOC •
MCB0,1	CM	E106/D5	C20R
MCB0,1	CM	F506/D5	C20R
MCB0,1	CM	G206/D5	C20R
MCC-	NGC	E306/A1	
MCC-	NGC	G504/B1	
MCD-	NGC	E306/B1	
MCD-	NGC	G504/B1	
MCE-	NGC	E306/B1	
MCE-	NGC	G504/C1	
MCK	CM	E105/H3,H5,H8	C20R
MCK	CM	F505/H3,H5,H8	C20R
MCK	CM	G205/G3,G5,G8	C20R
MCR	TRC	E807/D0	
MCR	TRC	F407/D0	
MCR	TRC	G807/D0	
MC1	TLC	E206/A1	
MC1	TT	E712/F4	
MC1	TT	F404/F4	
MC1	TT	G804/F3	
MC1-	OSC	F207/B4	
MC2-	OSC	F207/B4	
MC23	MTC	E408/G5	R21
MD	ORMC	E105/B0	
MD	IRMC	E105/F0	
MD	ORMC	F505/B0	
MD	IRMC	F505/F0	
MD	ORMC	G205/B1	
MD	IRMC	G205/F1	
MDI	CM	E118/B7	T40R
MDI	JLK	E118/B8	
MDK	CM	E206/B0	C32R
MD1	TLC	E206/A1	
MD2	TLC	E206/A0	
MD7	CM	G213/E3	REL R
ME	ORMC	E105/B1	
ME	IRMC	E105/F1	
ME	ORMC	F505/B0	
ME	IRMC	F505/F0	
ME	ORMC	G205/B1	
ME	IRMC	G205/F1	
MF	CM	E111/C5	T40R
MF	AMRST	G120/C8	WL39
MFK	CM	E408/A2,D2	C7L
MFL	CM	E408/A3,D3	C7L
MIR1	AMRST	G120/F9	WR22
MJ	ALM	E106/A9	
MJ	ALM	E107/C9	
MJ	ALM	E140/E4	
MJ	ALM	E306/G2	
MJ	ALM	F506/A9	
MJ	ALM	G142/E4	
MJ	ALM	G206/A9	
MJ	ALM	G504/F2	
MK	PC	E104/B7,F7	
MK	PC	E107/A6	
MK	PC	F504/B7,F7	
MK	PC	F507/A6	
MK	PC	G204/B7,F7	
MK	PC	G207/B6	
MKA	MTFC	E807/C7	
MKA	MTFC	F407/C7	
MKA-	MTFC	G807/C6	
MKB	MTFC	E807/B7	
MKB	MTFC	F407/B7	
MKB-	MTFC	G807/B6	
MKB1	MTFC	E807/B7	
MKB1	MTFC	F407/B7	
MKB1-	MTFC	G807/B6	
MKT2	MTC	E532/G4	R2
MKT3,4	MTC	E532/G4	L45,RR21
MLVF	MTC	E314/H8	R9
MLVM	MTC	E314/G8	R9
MN	ALM	E206/A9	
MN	ALM	E307/A0,E0	
MN	ALM	E405/A0,E0	
MN	ALM	E535/H7	
MN	ALM	G505/A0,E0	

DESIG	CKT	LOC	EQPT LOC •
MO1	MTC	E806/G5	R3
MO1	MTC	F405/G5	R3
MO1	MTC	G805/G5	R3
MP-	PC	E206/A7-D7	
MP-	PCMB	E307/C2-F8	
MP-	PCMB	E405/C1-G7	
MP-	CM	F205/B8	
MP-	PCMB	G505/C2-F8	
MPP	PCMB	E405/C9,G9	
MPR	MTFC	E807/B6	
MPR	MTFC	F407/B6	
MPR	MTFC	G807/A6	
MPO	CM	F205/B6,E6	
MR	CM	E410/E4	C27R
MR	AMRST	G120/B8	WR25
MRA	CM	E410/G5	C27R
MRA	CM	E411/G5	C27R
MRL	MTC	E107/D1	R4
MRL	OR	E107/D7	
MRL	CM	E135/G6	C15R
MRL	MTC	F507/D1	R4
MRL	PC	F507/D9	
MRL	IR	G139/B4	
MRL	MTC	G207/D1	R4
MRL	IR	G207/D8	
MRL1	CM	E806/B7	C18R
MRL1	CM	F405/B7	C18R
MRL1	CM	G805/B7	C18R
MS-	PC	E105/B4-E7	
MS-	PC	F505/B4-E7	
MS-	PC	G205/A4-E7	
MSK	CM	E105/H2-H7	C20R
MSK	CM	F505/H2-H7	C20R
MSK	CM	G205/G2-G7	C20R
MSO	PC	E105/B2,E2	
MSO	PC	F505/B2,E2	
MSO	PC	G205/A2,E2	
MST	IR	G117/C2	
MST	IR	G139/E4	
MT	CM	E106/A2	C19R
MTCL	PC	F507/C8	
MTP	AMRST	E806/A9	Y-11
MTP	MTFC	E807/C6	
MTR	MTFC	F407/C6	
MTR	AMRST	G805/A9	Y-11
MTR	MTFC	G807/C6	
MT1	CM	E106/A2	C19R
MT14	CM	E204/D5	C51R
MT2	CM	F204/D5	119L
MT24	CM	E204/D8	S-4
MT4	CM	E204/D3	C48L
MT5	CM	E208/F7	C39R
MT6	CM	E208/F7	C40R
MT7	CM	E522/D4	C38L
MT8	CM	E507/H4	C36L
MT8A	CM	E507/F5	C37L
MT8K	MTC	E507/E0	R35
MXT	CM	E109/A0	C9L
MXT	CM	G119/A0	C9L
M7	OS	E133/H7	
M7	AMRST	E143/H9	RR8
M7	OS	G213/G6	
M7	AMRST	G220/G9	RR8
N	MTC	G120/H4	R5
NA	MTC	E143/D0	R7
NA	CM	G220/D0	
NA1	CM	G220/D1	
NB	MTC	E143/D1	R7
NB	CM	G220/D1	
NB1	CM	G220/D2	
NC	MTC	E143/D2	R7
NC	CM	G220/D2	
NCCN	CM	E117/B8	T42R
NCCN	CM	E127/D9	T42R
NCCN	CM	E129/E6	T42R
NCNC	CM	E117/B8	T42R
NCNC	CM	E126/B9	T42R

DESIG	CKT	LOC	EQPT LOC •
NCNC	CM	E127/A8	T42R
NCNC	CM	E128/D8	T42R
NCNC	CM	E129/B8	T42R
NCNC	CM	E130/C9	T42R
NCNC	CM	E131/C9	T42R
NCNC	CM	E132/C7	T42R
NC1	CM	G220/D3	
ND	MTC	E143/D3	R7
ND	CM	G220/D3	
NDI	CM	G220/D3	C23L
NE	CM	E133/H4	T36R
NE	CM	F514/D0	T3LR
NGB	CM	E307/H1,H4,H8	C29L
NGB	CM	G505/H1,H4,H8	C29L
NGC	CM	E306/G4	C27L
NGC	CM	G504/F3	C27L
NGK	CM	E309/E7	C31L
NGK	CM	G508/E7	C31L
NGK1	CM	E309/F7	C31L
NGK1	CM	G508/F7	C31L
NOB	CM	E111/D5	T47R
NOB	IMGS	F213/F9	
NOC	CM	E212/E1	C26L
NOE	IR	G117/B1	
NR	CM	E316/G2	C31L
NR	CM	G511/G2	C31L
NSI	CM	E126/E3	C23L
NSK1	CM	F212/E1	T49R
NSS0-5	CM	E305/B8-E8	T33R
NTAN	IR	G108/G8	
NTAN	IR	G126/H9	
NTB	MTC	E532/C4	R40
NTC	MTC	E532/G4	R40
NTC1	MTC	E532/G4	R40
NTH	MTC	E532/C2	R40
N1	CM	E133/B2	T34R
N2-4	CM	E133/A4	T34R,T33R
N2-4	CM	F514/B0,C0	T34R,T33R
OA	IR	G108/B8	
OA	IR	G126/A9	
OA	CM	G208/B5	T38R
OAT	CM	E106/C3	C15R
OAT	CM	F506/C3	C15R
OAT	CM	G206/B4	C15R
OAT1	CM	E135/F4	C15R
OB	IR	G108/C8	
OB	IR	G126/A9	
OB	CM	G208/C5	T39R
OBS	CM	E111/E5	T47R
OBS	IMGS	F213/E9	
OCN	CM	F507/E3	T39R
OCN	CM	G207/E3	T39R
OD	CM	F214/F4	C22L
ODA	ALL	E409/H7	
ODD	ALL	E409/E7	
OF	OS	G114/G2	
OF	OS	G132/E3	
OF	OS	G816/G2	
OF	OS	G826/E5	
OF-	NG	E312/E5	
OFK	CM	E312/F8	C32L
OF1	OS	G815/C6	
OGC	CM	F207/C6	C23L
OH	AMRST	G104/F1	WR27
OK	AMRST	G814/F6	WR23
ON	TRC	E807/B0	
ON	MTFC	E807/G5,H6	
ON	IMGS	F206/E9	
ON	IMGS	F208/A8	
ON	IMGS	F209/A8	
ON	TRC	F407/B0	
ON	MTFC	F407/G5	
ON	MTFC	F407/H6	
ON	IMGS	F411/E3	
ON	IR	G118/F3	
ON	IR	G121/E8	
ON	TRC	G807/B0	

DESIG	CKT	LOC	EQPT LOC •
ON	MTFC	G807/G5,H6	
ONN	CM	F214/A4	
ONX	CM	E108/G3	C4L
ONX	CM	F511/G1	C4L
ONX	CM	G209/G1	C4L
ONX	CM	G210/H3	C4L
ON1	IMGS	F206/F9	
ON1	IMGS	F411/B3	
ON1	IR	G118/F0	
ON1	IR	G138/C0	
OPR	CM	E128/H7	T43R
OPS0	CM	E128/C6	T43R
OPS0-3	CM	E117/B8	T43R
OPS1	CM	E128/G6	T43R
OR	CM	E110/C5	T51L
ORK1	CM	F211/B0	T32R
ORK2	CM	F211/B9	T31R
OSC	CM	F207/D6	C22L
OSE	CM	F207/E7	C19L
OSE1	CM	F206/D7	C19L
OSG-	CM	E126/F1	C17L
OSGA-	OSC	F205/A7	
OSGA10,11	OSC	F205/A7	
OSGB-	OSC	F205/G7	
OSGB10,11	OSC	F205/G7	
OSG0-11	CM	E117/B4	C16L-C23L
OSG0-11	MTC	F204/B2	R12
OSG0-11	CM	F204/B6	C16L-C23L
OSK	MTC	F204/G2	R12
OSK	CM	F204/H5	C19L
OSKA	CM	F204/H5	C18L
OST	CM	F215/A0	C21L
OST1	CM	F215/B9	C22L
OST2	CM	F215/E9	C22L
OSO-4	CM	F206/A1-C1	C19L
OT	CM	E208/A7	C41R
OT	CM	E209/F4	C41R
OTL1	MTC	E114/G2	R10
OTS	CM	E209/F4	C41R
OVC	CM	E317/A1	C32L
OVC	CM	G512/A1	C32L
P	OS	G823/C0	
PA	CM	E505/C2	C39L
PB	CM	E505/E2	C39L
PBN	CM	E312/G8	C32L
PBXA	CM	E316/B1	C27R
PBXA	CM	E517/G2	C27R
PBXA	CM	G511/A1	C27R
PBX1,2	CM	E316/F4	C28L
PBX1,2	CM	G511/F4	C28L
PBY	CM	E117/B8	T43R
PBY	CM	E130/C3	T43R
PC	CM	E505/E2	C39L
PCL1,2	CM	E108/C2	C24L
PCL1,2	CM	G210/C2	C24L
PCN	CM	E117/B8	T43R
PCN	CM	E131/D8	T43R
PC0-14	AMRST	G121/E2,F2	
PC00-39	CM	E117/B8	T12+R,T7+R
PD	CM	E112/B4	T40R
PE	CM	E505/F6	C12R
PG	OS	G813/A5	
PG	OS	G823/A3	
PG1	OS	G813/B4	
PK	CM	E112/B4	T40R
PL	AMRST	G814/B7	WR16
PLL	MTC	E408/G1	RR4
PMO	CM	E312/G8	C32L
PMO	CM	E317/A1	C32L
PMO	CM	G512/A1	C32L
PN	CM	E309/A4	T39R
PN	CM	G508/A4	T39R
PNC	CM	E117/B8	T43R
PNC	CM	E131/G8	T43R
PNR	CM	E505/A2	C39L
PPX	CM	E117/B8	T43R
PPX	CM	E131/B8	T43R

• FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

ISSUE	DWG SIZE	
5	C2	APPARATUS INDEX
A504	SFD-10-01	BELL LABORATORIES

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RELAYS

DESIG	CKT	LOC	EQPT LOC *
PR	CM	E510/E8	C40L
PRL	CM	E408/B3,D3	C7L
PRLL	CM	E408/A2,E2	C7L
PRLLA	CM	E408/A2,F2	C7L
PS	CM	E112/C4	T40R
PST	IR	G139/D2	
PTK	CM	E309/A2	C29L
PTK	CM	G508/A2	C29L
PTN	CM	E309/C4	T39N
PTN	CM	G508/C4	T39N
PU	MTC	E532/D2	R42
PU	CM	E535/F5	C25R
PU	IAO	E711/D4	
PUL	CM	E317/C6	C30L
PUL	CM	G512/C5	C30L
PU1	CM	E317/F2	C30L
PU1	MTC	E532/E1	R42
PU1	CM	G512/F2	C30L
P0-9	CM	E504/A0-F0	C39L
P0A-2A	CM	E504/A1,B1	C12R
P1-5	IR	G136/A0-F0	
P1-5	OS	G823/A9-F9	
P2A	IR	G136/C4	
P3A-5A	MTC	E516/G4,H4	R35
P5A-9A	CM	E504/D1-F1	C12R
R	TL	E520/A0	
R	IMGS	F208/D8	
R	IMGS	F209/D8	
R	IMGS	F414/B8	
R	IMGS	F415/B8	
R	IMGS	F416/D1	
R	ITT	G135/D2	
R-	CM	E117/A3	RR-
R-	CM	E117/G4	RR-
R-	T-REG	E128/A8,B8	
R-	CM	E130/G3	RR-
R-	CM	E132/D1,E1	RR-
R-	OSGR	G815/G5	
R-	OSGR	G824/G6	
RA	IRMC	E104/E2,E4,E6	
RA	ORMC	E104,B2,B4,B6	
RA	MTC	E516/D7	R36
RA	TL	E520/A0	
RA	ORMC	F504/B2,B4,B5	
RA	IRMC	F504/E2,E4,E6	
RA	IR	G117/B0	
RA	IR	G136/A5	
RA	ORMC	G204/A2,A4,A5	
RA	IRMC	G204/E2,E4,E5	
RA-	CM	E117/C1	
RAP1-5	MTC	E516/D4-G4	R36
RAV	MTC	E516/A3	R35
RAV1,2	CM	E517/B6	C36R
RA0-8	MTFC	E807/F6	
RA0-8	MTFC	F407/F6	
RA0-8	MTFC	G807/F6	
RA1	IR	G136/B9	
RA1-5	MTC	E516/B3,C3	R35,R36
RA1-6	CM	E208/C3-F3	C37R
RA1'-5'	MTC	E516/B3-D3	R35,R36
RB	ORMC	E104/B3,B4,B6	
RB	IRMC	E104/E2,E3,E5	
RB	TL	E520/A0	
RB	ORMC	F504/B3,B4,B6	
RB	IRMC	F504/E2,E4,E5	
RB	IR	G118/F3	
RB	ORMC	G204/A3,A4,A6	
RB	IRMC	G204/E2,E3,E5	
RBT	CM	E517/D3	C36R
RBT1	MTC	E516/E8	R4
RB0	IRL	G106/E3,E7	
RB1	IR	G118/F3	
RB1,3	AMRST	G120/D5	WR27
RB2	AMRST	G120/B3	WR27
RB3	IRL	G107/B2,B7	
RC	ORMC	E104/B3,B4,B6	
RC	IRMC	E104/E2,E4,E6	
RC	IAO	E537/C6	
RC	IAO	E711/E5	
RC	ORMC	F504/B3,B4,BC	
RC	IRMC	F504/E2,E4,E6	
RC	ORMC	G204/A3,A4,A6	
RC	IRMC	G204/E2,E4,E5	
RCK	MTC	E313/B0	R9
RCK1	CM	E537/C4	C33L
RCK1	CM	E711/D9	C33L
RCK2	CM	E537/D3	C33L
RCK3	CM	E537/F4	C33L
RCL	CM	E313/F7	C30L
RCL	CM	G509/G9	C30L
RCN1-15	CM	E312/D8	C50L
RCN1-15	CM	G509/E8	C50L
RCTA	CM	E535/A7	C26R
RCTB	CM	E535/B7	C26R
RCT1-9	CM	E313/A7,B7	C50L
RCT10	CM	E313/C7	C50L
RCT11-15	CM	E313/D7,E7	C50L
RCY	MTC	E516/A3	R6
RCY	CM	E517/A3	C37R
RCY1	CM	E517/A3	C37R
RCY2	CM	E317/G3	C31L
RCY3	CM	E317/G6	C31L
RD	ORMC	E104/B2,B3,B5	
RD	IRMC	E104/E2,E3,E5	
RD	ORMC	F504/B2,B3,B5	
RD	IRMC	F504/E2,E4,E5	
RD	ORMC	G204/A2,A3,A5	
RD	IRMC	G204/E2,E3,E5	
RDL	CM	E517/C3	C17R
RE	ORMC	E104/B2,B3,B5	
RE	IRMC	E104/E3,E4,E6	
RE	ORMC	F504/B2,B3,B5	
RE	IRMC	F504/E3,E4,E6	
RE	ORMC	G204/A2,A3,A5	
RE	IRMC	G204/E3,E4,E6	
REC	RTC	E806/G8,H4	R3
REC	MTC	F405/H4	R3
REC	MTC	G805/H4	R3
REG	IR	G112/D6	
REG	IR	G130/E6	
REG	IR	G134/F7	
REG1	IR	G112/E6	
RF	CM	E317/G0	C38R
RF	CM	E517/H4	C38R
RF	TL	E520/F0	
RF	CM	G512/G3	C38R
RFA	CM	E317/H0	C38R
RFA	CM	E517/H4	C38R
RFA	CM	G512/H3	C38R
RGT	CM	E131/F2	T38R
RGT	CM	F514/F5	T38R
RGTA	CM	E131/H0	C31L
RGTA	CM	E309/F2	C31L
RGTA	CM	G508/F2	C31L
RI	CM	E317/C1	C31L
RI	CM	G512/C1	C31L
RIB	CM	E317/E8	C32L
RIB	CM	G512/E8	C32L
RIR1	AMRST	G120/F9	WR22
RK	CM	E520/D3	C31R
RK1	CM	E114/G3	C32R
RK2	CM	E114/G9	C32R
RK3	CM	E114/H4	C32R
RL	OR	E107/E7	
RL	IAO	E537/C7	
RL	IAO	E711/E6	
RLK	IR	G118/F0	
RLK	IR	G138/B0	
RM	MTFC	E807/E6	
RM	MTFC	F407/E6	
RM	MTFC	G807/E6	
RMA	MTFC	E807/E6	
RMA	RTFC	F407/E6	
RMA	MTFC	G807/E6	
RMG	IMGS	F208/F6	
RMG	IMGS	F209/G6	
RMG	IMGS	F414/D5	
RMG	IMGS	F415/E5	
RMG	IMGS	F416/F4	
RM1	MTFC	E807/G6	
RM1	MTFC	F407/F6	
RM1A	MTFC	E807/G6	
RM1A	MTFC	F407/G6	
RN	CM	F215/F9	C25L
RNG	CM	E316/B2	C30L
RNG	CM	G511/A2	C30L
RNK1	CM	F215/F8	C25L
RNK2	CM	F215/F3	C25L
RNT	CM	F215/G3	C25L
RNT0-2	IMGS	F214/F6-H6	
RNT1	CM	F215/G9	C25L
RNT2	CM	F215/F8	C25L
RNT20	CM	F214/C6	C13L
RN0,1,2,4,7	CM	F214/A7-D7	C25L
RN0,1,2,4,7	IMGS	F214/C9	
RN2K	CM	F214/H4	C13L
RN2T	CM	F214/G4	C13L
RO	IMGS	F413/B1	
RO	CM	F508/B5	T51L
RO	IR	G117/D2	
RO	IR	G138/F0	
RO	CM	G208/E5	T51L
RO	OS	G815/F6	
RO	OS	G824/F8	
ROA	CM	E118/F4	C33R
ROA	CM	E132/D8	C33R
ROS	MTFC	E807/D5	
ROS	MTFC	F407/D5	
ROS	MTFC	G807/D5	
ROT	MTC	G814/D1	R43
RP	CM	E113/C4	T51L
RP	IMGS	F212/H9	
RPK	CM	F212/H6	T47R
RP0	IRL	G106/E1,E6	
RP3	IRL	G107/B1,B6	
RQ	CM	E510/C6	C40L
RR	CM	E117/B8	T40R
RR	CM	E128/E8	T40R
RR	CM	E129/C8	T40R
RRK	CM	E112/F4	T40R
RR0,1,2,4,7	OS	G812/A0-C0	
RR0,1,2,4,7	OS	G822/A0-C0	
RS	ORMC	E104/C2,C4,C5	
RS	IRMC	E104/G2,G4,G5	
RS	ORMC	E140/B0	
RS	IRMC	E140/B0	
RS	IMGS	F208/F6	
RS	IMGS	F209/G6	
RS	IMGS	F414/D5	
RS	IMGS	F415/D5	
RS	IMGS	F416/F4	
RS	ORMC	F504/C2,C4,C5	
RS	IRMC	F504/G2,G4,G5	
RS	IRMC	G139/D6	
RS	ORMC	G142/B0	
RS	IRMC	G142/B0	
RS	ORMC	G204/C2,C4,C5	
RS	IRMC	G204/G2,G4,G5	
RSC	CM	F215/B0	C22L
RSK	CM	E536/G7	C33L
RS0-9	MTC	E536/A2-F2	R38
RS0-9	CM	E536/A3-F3	C35L
RT	IAO	E711/C4	
RTC	AMRST	E143/H3	Y-52
RTC	AMRST	G220/H4	Y-52
RTN	CM	F214/F4	C13L
RTNA	CM	F214/C6	C13L
RTOS	MTFC	E807/F6	
RTOS	MTFC	F407/G5	
RTOS	MTFC	G807/G5	
RUN	CM	F214/E4	C13L
RUNA	CM	F214/D6	C13L
RU1	MTFC	G807/G6	
RU1A	MTFC	G807/G6	
RV	IR	G118/C2	
RV	IR	G138/C9	
RVS	IMGS	F209/F6	
RVS	IMGS	F415/D5	
RVS	IMGS	F416/F3	
RV1	CM	E603/A8	C29L
RV2	CM	E603/G8	C29L
RX	TL	E520/B0	
RYC	CM	E517/F2	C37R
RYCA	CM	E317/F3	
RYC5	CM	E317/G3	
RYT	CM	E135/C3	C16R
RYT1	CM	E135/B4	C16R
R0-8	MTFC	E807/F6	
R0-8	MTFC	F407/F6	
R0-8	MTFC	G807/F6	
R00	CM	E129/B6	
R01	CM	E129/D6	
R02	CM	E129/E6	
R03	CM	E129/G6	
R04	CM	E130/E9	
R06	CM	E131/B1	
R07	CM	E131/H6	
R08	CM	E130/D9	
R10	CM	E126/B7	
R11	CM	E130/B9	
R12	CM	E130/C9	
R13	CM	E127/F8	
R14	CM	E128/B6	
R15	CM	E128/B6	
R16	CM	E128/D6	
R17	CM	E128/E6	
R18	CM	E128/F6	
R19	CM	E128/G6	
R20	CM	E126/F7	
R21	CM	E126/D7	
R22	CM	E129/D1	
R23	CM	E130/G9	
R24	CM	E127/H1	
R25	CM	E127/E1	
R26	CM	E129/B1	
R27	CM	E129/E1	
R28	CM	E131/C8	
R29	CM	E131/F8	
R30	CM	E127/B9	
R31	CM	E127/B1	
R32	CM	E127/C1	
R33	CM	E127/D1	
R34	CM	E127/D7	
R35	CM	E127/C6	
R36	CM	E132/D7	
S	IAO	E710/A6	
S	IMGT	F416/A7	
S	OGT	G114/B5	
S	OGT	G132/A4	
S	IT	G817/B5	
S	IT	G827/B4	
S-	CM	E124/A4	
S-	OSC	F207/A1	
SA	TL	E520/G0	
SAC	CM	E316/E6	T35R
SAC	CM	G511/E6	T35R
SAC1	CM	E316/E8	C28L
SAC1	CM	G511/E8	C28L
SAK	CM	E311/A8	C28L
SAK	CM	G507/A7	C28L
SA0-8	MTFC	E807/F6	
SA0-8	MTFC	F407/F6	
SA0-8	MTFC	G807/F6	
SA1-	OSC	F207/B3	
SA2-	OSC	F207/B3	
SB	MTC	E516/B7	R5
SB	TL	E520/H0	
SB	IMGS	F206/G9	
SB	IMGS	F411/C4	
SB1-	OSC	F207/B3	
SB2-	OSC	F207/B3	
SC	IMGS	F213/F9	
SCBA0-3	CM	F204/B8	C16L,C17L
SCBB0-3	CM	F204/C8	C16L,C17L
SCB1	CM	E605/C1	C34R
SCB2	CM	E605/C1	C34R
SCC	CM	E111/A6	T47R
SCCK	CM	E113/G7	T51L
SCK	CM	E112/D4	T40R
SCN	CM	E112/E4	T40R
SC1-	OSC	F207/B3	
SC2-	OSC	F207/B3	
SDT	CM	E134/G3	C16R
SEF	TL	E520/G0	
SEL	TL	E520/C0	
SER	TL	E520/A0	
SF	CM	E134/B3	C15R
SFT	CM	E134/B3	12
SHK	CM	F206/F3	C21L
SHK	CM	F411/G6	C21L
SHKA	CM	F206/E6	C22L
SIA	CM	F204/D5	C18L
SIB	CM	F204/E5	C18L
SKA	CM	F205/D4	C18L
SKB	CM	F205/F4	C18L
SL	CM	E533/D9	C29R
SL	MTC	E533/G6	R42
SLA	CM	E533/E3	C30R
SLCK1	CM	E316/F8	C28L
SLCK1	CM	G511/F8	C28L
SLK	CM	F206/G4	C21L
SLK	CM	F411/F4	C21L
SLK1,2	CM	F207/F7	C22L
SLRK	CM	E121/F1	C30R
SLRK	CM	E531/B6	C30R
SNG1,2	CM	E306/F4	C22L
SNG1,2	CM	G504/F3	C22L
SNK	CM	E207/G5	C37R
SOG1,2	CM	E108/B2	C34R
SON	CM	F204/C5	C22L
SP	CM	E806/D4	C35R
SP	CM	F405/D4	C35R
SP	SR	G116/G0	
SP	CM	G805/D4	C35R
SP	OS	G815/A6	
SP	OS	G825/C8	
SPE	AMRST	G814/C6	WR5
SPE1	AMRST	G814/B6	Y-31
SPL	CM	G208/A5	REL R
SPL1	CM	G208/A5	REL R
SPR-	AMRST	G120/F2	WR39
SP1	CM	F405/D4	C34R
SP1	CM	G805/D4	C34R
SP1	CM	G806/D4	C34R
SQA	CM	E507/H6	C36L
SQ0	CM	E507/F6	C36L
SQ1	CM	E507/E6	C36L
SR	IMGS	F208/B8	
SR	IMGS	F209/B8	
SR	IMGS	F411/D3	
SR	IR	G118/G0	
SRA	MTRC	E108/A7	
SRA	MTRC	E140/A4	
SRA	MTRC	F510/A7	
SRA	MTRC	G142/A4	
SRA	MTRC	G210/A7	
SRB	MTRC	E108/A7	
SRB	MTRC	E140/B4	
SRB	MTRC	F510/A7	
SRB	MTRC	G142/B4	
SRB	MTRC	G210/A7	
SRK	CM	E537/C3	C33L
SSA	MTC	F204/F2	R12
SSA	CM	F204/F5	C19L
SSAA	MTC	F204/F2	R12

* FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

APPARATUS INDEX

DWG SIZE	ISSUE
C2	5

BELL LABORATORIES | SFD-1B-01 | A505

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RELAYS

DESIG	CKT	LOC	EQPT LOC *
SSB	MTC	F204/F2	R12
SSB	CM	F204/G5	C19L
SSBA	MTC	F204/G2	R12
SST1	MTC	F207/F1	R12
SS0	OSL	F208/D1	
SS0,4	OSL	F209/C1	
SS4	OSL	F208/C1	
SS5	OSL	F208/B1	
SS5	OSL	F209/B1	
SS9	OSL	F208/A1	
SS9	OSL	F209/A1	
ST	TRC	E807/B0	
ST	TRC	F407/B0	
ST	TRC	G807/B0	
ST	OS	G810/E9	
STF	CM	E510/E8	C40L
STP	CM	E525/C9	C38L
STP	MTC	E525/G0	R35
STPA	CM	E408/A3,D3	C7L
STPA	MTC	E408/G4	R35
STPA	CM	E525/D7	C7L
STP1	CM	E525/A8	C38L
STP2	CM	E525/F2	C38L
STP2A	CM	E525/E2	C11R
STP3	CM	E525/D9	C38L
STR1,2	TRC	E807/A0	
STR1,2	TRC	F407/A0	
STR1,2	TRC	G807/A0	
STS	IR	G117/A8	
STS	OS	G811/F8	
STS	OS	G821/F8	
STS1	IR	G117/A9	
STS1	OS	G811/F9	
STT	AMRST	G120/G7	WR23
STX	CM	E109/B0	C9L
STX	CM	F507/E3	C9L
STX	CM	G119/B0	C9L
STX	CM	G207/E3	C9L
ST7	OS	G820/E9	
SUP	IR	G112/E6	
SUP	IR	G130/E6	
SUP	IR	G134/F7	
SUP1	IR	G112/F6	
S0-8	MTFC	E807/F6	
S0-8	MTFC	F407/F6	
S0-8	MTFC	G807/F6	
S0G1,2	CM	G210/B2	C34R
S00-9	CM	E124/A7-D6	T43L
S1	IAO	E211/C9	
S1	IAO	E528/B9	
S1	IAO	E529/B9	
S2	IMGT	F208/E4	
S2	IMGT	F209/E3	
S20-29	CM	E124/D6-G7	
S30-39	CM	E124/B9-G9	T43L
T	IMGS	F208/D8	
T	IMGS	F209/D8	
T	IMGS	F414/A8	
T	IMGS	F415/A8	
T	IMGS	F416/C1	
TA	CM	E210/D2	C44R
TA	TL	E211/F8	
TAL	CM	E106/B4	C18R
TAL	CM	F506/B4	C18R
TAL	CM	G206/B4	C18R
TAN	IR	G108/F8	
TAN	IR	G126/F9	
TAN	CM	G208/G5	T51L
TAN1	IR	G108/F8	
TAN1-4	IR	G126/F9,G9	
TB	TL	E211/H8	
TB	MTC	E516/C7	R5
TBC	CM	E208/G7	C44R
TBH	CM	E317/D8	C33L
TBH	CM	G512/D8	C33L
TBI	CM	E317/F2	C31L
TBI	CM	G512/F1	C31L
TB1B	CM	E317/E8	REL R
TB1B	CM	G512/F8	REL R
TBK	CM	E209/G5	C44R
TBSK	MTC	E308/F0	R40
TBS0-3	CM	E308/G3	C10R
TBS0-3	NG	E308/G8	
TBT	CM	E210/A2	C44R
TBTA	CM	E210/C2	C45R
TBTB	CM	E210/B2	C45R
TBW	CM	E308/D2	C31L
TBW	CM	G506/E1	C31L
TB0-5	TL	E209/F8	
TB0-9	CM	E117/C4	C43R,REL R
TB0-9	CM	E208/DC	C43R,REL R
TB0-9	TL	E209/F8	
TB00	NG	E308/F8	
TB00-90	NG	G506/F7,G7	
TB09	NG	E308/F8	
TB09-99	NG	G506/E7,F7	
TB1	AMRST	G814/D5	WR4
TB90	NG	E308/E8	
TB99	NG	E308/E8	
TC	PC	E108/H7	
TC	PC	E140/D1	
TC	PC	F510/H7	
TC	PC	G142/D1	
TC	PC	G210/G7	
TCA	MTRC	E108/A7	
TCA	MTRC	E140/A4	
TCA	MTRC	F510/A7	
TCA	MTRC	G142/A4	
TCA	MTRC	G210/A7	
TCA1	MTRC	E140/B6	
TCA1	MTRC	G142/B6	
TCB	MTRC	E108/A7	
TCB	MTRC	E140/C4	
TCB	MTRC	F510/A7	
TCB	MTRC	G142/C4	
TCB	MTRC	G210/A7	
TCB1	MTRC	E140/B6	
TCB1	MTRC	G142/B6	
TCCA	CM	F511/E4	C43L
TCCA	CM	G209/D3	C43L
TCCK	CM	E118/D4	T51L
TCCK	CM	F511/D8	T51L
TCCK	CM	G209/D8	T51L
TCCN	CM	E117/B8	T42R
TCHK	CM	E525/H2	C31R
TCH0-9	CM	E522/A8-H8	C21R
TCL-	AMRST	G121/G2	WR39
TCNC	CM	E117/B8	T42R
TCNC	CM	E126/F9	T42R
TC1	PC	E108/H7	
TC1	PC	E140/E1	
TC1	PC	F510/H7	
TC1	IR	G139/B3	
TC1	PC	G142/E1	
TC1	PC	G210/H7	
TC2	IR	G118/E0	
TC2	IR	G138/A0	
TC2	IR	G139/B3	
TE	CM	E208/B7	C39R
TE	CM	E209/F3	C39R
TEN	IR	G117/C2	
TER1,2	CM	E108/D1	C34R
TER1,2	CM	F510/D1	C34R
TF	ITT	G115/D1	
TF	ITT	G133/C2	
TF	ITT	G135/D4	
TFK1-3	CM	E206/C3,D3	C44R
TFT	IR	G109/A9	
TFT	IR	G127/A9	
TF0,1,2,4,7	CM	E206/E6	C43R
TF0,1,2,4,7	CM	F417/E8	C43R
TF0,1,2,4,7	CM	F512/C6	C43R
TF0,1,2,4,7	CM	F513/C6-F6	C43R
TF0,1,2,4,7	IR	G109/A7-F7	
TF0,1,2,4,7	IR	G127/A7-F7	
TF0,1,2,4,7	CM	G211/D2-F2	C43R
TG	OS	G114/G3	
TG	OS	G132/E4	
TG	OS	G816/G2	
TG	OS	G826/E5	
TGCK	CM	E533/D8	C29R
TGP	CM	E117/C4	C42R
TGP	CM	E208/B0	C42R
TGS	CM	E117/C4	C42R
TGS	CM	E208/A0	C42R
TGS1,2	CM	F211/E5	T44R,T47R
TGT	CM	E806/C6	C23L
TGT	CM	F405/D6	C23L
TGT	CM	G805/C6	C23L
TGT	OS	G824/B4	
TG0-9	CM	E117/C4	C42R
TG0-9	CM	E208/A1-C1	C42R
TG1	OS	G815/B6	
TG1	OS	G224/C8	
TH0,1,2,4,7	CM	E133/F3	T34R
TH0,1,2,4,7	CM	F210/H5	T34R
TH0,1,2,4,7	CM	F515/G5	T34R
TK	CM	E525/F2	C31R
TKS	MTC	E204/H2	R35
TLC1,2	CM	E121/C1	C32R
TLC1,2	CM	E206/D2,E2	C32R
TLC1,2	CM	F511/F3	C32R
TLC1,2	CM	G209/F3	C32R
TLH	MTC	E533/G8	L45
TM	CM	E106/B2	C20R
TM	MTFC	E106/E0	
TM	PC	E108/E9	
TM	PC	E140/E2	
TM	LL	E604/A4	
TM	IMGS	F413/C4	
TM	CM	F506/B2	C20R
TM	MTFC	F506/E0	
TM	PC	F510/E9	
TM	OGT	G115/D7	
TM	IR	G118/E2	
TM	OGT	G133/C7	
TM	OGT	G135/C7	
TM	IR	G138/H9	
TM	PC	G139/C5	
TM	PC	G142/E2	
TM	CM	G206/B2	C20R
TM	MTFC	G206/E0	
TM	PC	G210/E9	
TM	OS	G813/F8	
TM	OGT	G816/C8	
TM	OS	G823/G3	
TM	OGT	G826/C8	
TMA,B	MTRC	E140/G6,H6	
TMA,B	IR	G138/D0,E0	
TMA,B	MTRC	G142/H6	
TMG	IMGS	F208/F6	
TMG	IMGS	F209/G7	
TMG	IMGS	F414/D6	
TMG	IMGS	F415/D6	
TMG	IMGS	F416/F3	
TMK	CM	G115/F8	C20L
TMK	CM	G133/F8	C20L
TMK	CM	G135/F7	C20L
TMK	CM	G816/F8	C20L
TMK	CM	G826/F8	C20L
TMS	CM	E135/B1	C16R
TM1	PC	E108/E8	
TM1	PC	E140/F0	
TM1	LL	E604/A5	
TM1	IMGS	F413/B1	
TM1	PC	F510/F8	
TM1	IR	G118/G0	
TM1	PC	G142/F0	
TM1	PC	G210/F8	
TN	CM	E309/B4	T39R
TN	CM	G508/B4	T39R
TN-	NG	G506/G7	
TNK	CM	G509/F9	C33L
TOC	MTC	E211/C1	
TOC	MTC	E528/H6	
TOC	MTC	E529/H6	
TOG1,2	CM	E108/C2	C34R
TOG1,2	CM	G210/G2	C34R
TOG3	CM	G210/D4	C10L
TOL	IR	G108/G8	
TOL	IR	G126/H9	
TCS	CM	E117/B8	T43R
TOS	CM	E132/D8	T43R
TP	CM	E113/D4	T51L
TP	IMGS	F212/G9	
TPS	CM	F212/H6	T41R
TP00-39	IRL	G104/C2-G7	
TP01	IRL	G135/E2	
TR	PC	E206/D9	
TR	PCMB	E307/A7,E7	
TR	PCMB	E405/A6,E6	
TR	PCMB	G505/A7,E7	
TR-	PC	E206/C9	
TR-	PCMB	E307/A6,E6	
TR-	PCMB	E405/A4,E4	
TR-	PCMB	G505/A6,E6	
TRA	CM	E106/C4	C18R
TRA	CM	F506/C4	C18R
TRA	CM	G206/C4	C18R
TRB1,2	CM	E807/C9	C18R
TRB1,2	CM	F407/D9	C18R
TRB1,2	CM	G807/B9,C9	C18R
TRC	PC	E106/H8	
TRC	MTFC	E807/A4	
TRC	TRC	E807/C0	
TRC	MTFC	F407/A4	
TRC	TRC	F407/C0	
TRC	PC	F506/G5	
TRC	PC	G206/H6	
TRC	CM	G509/F8	C47L
TRC	MTFC	G807/A4	
TRC	TRC	G807/C0	
TRC1,2	MTFC	E807/B5	
TRC1,2	MTFC	F407/B5	
TRC1,2	MTFC	G807/B5	
TRL	MTC	E107/B1	R4
TRL	PC	E107/B6	
TRL	CM	E806/D8	C18R
TRL	CM	F405/D8	C18R
TRL	MTC	F507/B1	R4
TRL	PC	F507/B6	
TRL	IR	G139/C4	
TRL	MTC	G207/B1	R4
TRL	PC	G207/B6	
TRL	IR	G207/C7	
TRL	CM	G805/D8	C18R
TRL	OS	G815/D6	
TRL	OS	G824/D8	
TRN	CM	G209/G8	T36R
TRR	CM	E806/C5	C18R
TRR	CM	F405/D5	C18R
TRR	CM	G805/D5	C18R
TRS	CM	E124/F3	C19R
TRS	PC	E108/F9	
TRS	CM	F510/F3	C19R
TRS	PC	F510/F9	
TRS	CM	G210/F3	C19R
TRS	PC	G210/G9	
TRSA	CM	E806/A4	C19R
TRSA	CM	F405/A4	C19R
TRSA	CM	G805/A4	C19R
TRST	CM	E806/A7	C19R
TRST	CM	F405/A7	C19R
TRST	CM	G805/A7	C19R
TRT	CM	E134/C8	C15R
TRTR	CM	E134/B9	C15R
TR1	CM	E806/C5	C18R
TR1	CM	F405/D4	C18R
TR1	CM	G805/C5	C18R
TR2	CM	E108/F5	C35R
TR2	CM	F510/F5	C35R
TR2	CM	G210/F5	C35R
TR2B,C	CM	E108/C5	C35R,C27R
TR2B,C	CM	F510/B3	C35R,C27R
TR2B,C	CM	G210/C5	C35R,C27R
TS	TT	E532/A1	
TS	IMGS	F208/F6	
TS	IMGS	F209/G7	
TS	IMGS	F414/D6	
TS	IMGS	F415/D6	
TS	IMGS	F416/F2	
TS	ITT	G115/D3	
TS	ITT	G133/C3	
TS	ITT	G135/C3	
TS	ITT	G816/C3	
TS	ITT	G826/C3	
TSE1,2	CM	E208/F7,G7	C39R,C40R
TSK	MTC	E209/B4	R35
TST	TL	E209/B8	
TST	CM	G118/C7	C17R
TS0-9	CM	E208/A4-G4	C40R
TT	OS	G824/B8	
TTF	CM	E510/F8	C40L
TTK	OS	G824/A8	
TTL	MTC	E142/D3	R8
TTL	MTC	G219/D3	R8
TTL1,2	MTC	E142/B3,C3	R8
TTL1,2	MTC	G219/B3,C3	R8
TT0	CM	E209/D3	C39R
TT1	OS	G824/C8	
TT5	CM	E209/C3	C39R
TT9	CM	E209/B3	C39R
TVA	CM	E111/B6	T47R
TVT	IMGS	F213/G9	
TW	CM	E208/E0	C41R
TYM	CM	E309/H4	C27L
TYM	CM	G508/H4	C27L
TYMA	CM	E309/F0	C27L
TYMA	CM	G508/F0	C27L
T2	CM	E208/E1	C41R
T0-2	MTFC	E807/C4	
T0-2	MTFC	F407/C4	
T0-2	MTFC	G807/C4	
T0-9	TL	E211/G7	
T0,1	TL	E211/F8,H8	
T0,1,2,4,7	CM	E133/G3	T33R
T0,1,2,4,7	CM	F210/G5	T33R
T0,1,2,4,7	CM	F515/G6	T33R
T0,1,2,4,7	CM	G215/B5-D5	T33R
T0,1,2,4,7	CM	G217/B5-D5	T33R
T2-9	TL	E211/G7	
UC	CM	E306/B4	T36R
UC	CM	G504/D4	T36R
UK	CM	E309/E4	C31L
UK	CM	G508/E4	C31L
UN-	JLK	F207/H2	
U0-9	NG	E311/D8	
U0-9	NG	G507/D8	
U0,1,2,4,7	CM	E133/H3	T36R
U0,1,2,4,7	CM	F210/G5	T36R
U0,1,2,4,7	CM	F515/G6	T36R
U0,1,2,4,7	CM	C218/B5-D5	T36R
VCI	CM	E317/B1	C33R
VCI	CM	G512/C1	C33R
VFA,B,C	LL	E410/F7	
VFA,B,C	LL	E411/G7	
VFK	MTC	E314/F3	R9
VFL	CM	E315/G4	C30L
VFL	CM	E603/G3	C30L
VFL	CM	G510/G4	C30L
VFN0-4	CM	E312/E8	C50L
VFN0-4	CM	G509/E8	C50L
VFT0-4	CM	E315/F3	C46L
VFT0-4	CM	E603/F2	C46L
VFT0-4	CM	G510/F3	C46L

* FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

ISSUE	DWG SIZE	APPARATUS INDEX
5	C2	
A506	SFD-10-01	BELL LABORATORIES

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RELAYS

DESIG	CKT	LOC	EOPT LOC *
VF0-4	CM	E114/D3	C46L
VF0-4	OS	E114/E8	
VG80-11	LL	E410/G7	
VG80-11	LL	E411/H7	
VG800-11	LL	E407/C3	
VG800-11	LL	E409/E3	
VGC0-11	LL	E410/H7	
VGC0-11	LL	E411/H7	
VGK	MTC	E314/D3	R9
VGL	CM	E315/D4	C30L
VGL	CM	E603/D3	C30L
VGL	CM	G510/D4	C30L
VGN0-11	CM	E312/D8	C44L
VGN0-11	CM	G509/D8	C44L
VGTS-11	MTFC	E315/E1	
VGT0-11	CM	E315/C3,D3	35
VGT0-11	CM	E603/D2	35
VGT0-11	MTFC	G510/C1,D1	
VGT0-11	CM	G510/C3,D3	35
VGT0-4	MTFC	E315/C1	
VGT1	MTC	E314/D3	R6
VG0,1,2,4,7,10	CM	E114/F3	C44L
VG0,1,2,4,7,10	OS	E114/F8	
VP	CM	E130/E3	T43R
VTK1	CM	E315/G6	C43L
VTK1	CM	E603/G6	C43L
VTK1	CM	G510/G6	C43L
W	PC	E104/A8,E8	
W	PC	F504/A8,E8	
W	PC	G204/A8,E8	
W	OS	G825/C0	
WT	CM	E135/B3	C16R
XACH	CM	E524/H9	C6L
XACS	CM	E410/F3	C6L
XAF	CM	E520/F5	C6L
XAFT	CM	E204/D1	C9L
XAJC	CM	E521/E9	C6L
XAJS	CM	E527/H4	C6L
XALC	CM	E528/H5	C6L
XALC	CM	E529/H5	C6L
XALR	CM	E520/E5	C6L
XATS	CM	E527/H3	C6L
XAVGB	CM	E407/D7	C6L
XAVGB	CM	E410/F3	C6L
XAVGB	CM	E411/H4	C6L
XBT	CM	E107/C3	C7L
XBT	CM	F507/C3	C7L
XBT	CM	G139/C8	C7L
XBT	CM	G207/C3	C7L
XCH	CM	E524/H8	C5L
XCKR	CM	E212/F2	C7L
XCL	CM	E117/F5	C7L
XCLC	CM	E110/C5	C7L
XCLC	CM	F508/B4	C7L
XCLC	CM	G208/F5	C7L
XCP	CM	E117/D5	T49R
XCR	CM	E117/D5	C7L
XCS	CM	E410/D3	C5L
XDL	CM	E117/E5	C7L
XF	CM	E520/G8	C5L
XFT	CM	E204/C0	C9L
XFT	MTC	E204/F0	R36
XFTN	CM	E312/B0	C4L
XFTN	CM	G509/B0	C4L
XFUN	CM	E312/D0	C4L
XFUN	CM	G509/D0	C4L
XHG	CM	E407/E6	C7L
XHG	CM	E409/D0	C7L
XJC	CM	E521/D9	C5L
XJG	CM	E510/A4	C5L
XJS	CM	E527/H2	C5L
XJS	CM	E528/E0	C5L
XJS1	CM	E528/F1	C10L
XLC	CM	E211/A4	C5L
XLC	CM	E528/G6	C5L
XLC	CM	E529/G6	C5L
XLG	CM	E407/B7	C7L
XLO	CM	E604/F4	C7L
XLR	CM	E520/A4	C5L
XLS	CM	E526/H2	C7L
XLV	CM	E211/E5	C7L
XMRL	CM	E107/D3	C7L
XMRL	CM	F507/D3	C7L
XMRL	CM	G139/B8	C7L
XMRL	CM	G207/D3	C7L
XMR1	AMRST	E517/D7	WR18
XMR2	AMRST	E107/H5	WR18
XN	CM	E305/G9	C7L
XNS	CM	E305/F9	T34R
XOB	CM	E111/E4	T47R
XPG	CM	E505/A1	C7L
XPT	CM	F214/D6	C8L
XRC	CM	E313/G7	C8L
XRL	CM	E107/E3	C8L
XRS1,2	CM	E536/C7,D7	C5L
XRS3,4	CM	E536/A3,B3	C6L
XS	CM	F207/C2	C8L
XSA	CM	F207/C2	C22L
XSL	CM	E533/C8	C8L
XSS	CM	F206/D0	C8L
XT	CM	E110/F5	C8L
XT	CM	F508/A4	C8L
XT	CM	G208/F5	C8L
XTA	CM	E110/E4	C9L
XTA	CM	G208/F5	C9L
XTG1	CM	E209/C4	C8L
XTRK	CM	E108/D5	C8L
XTRK	CM	F510/D5	C8L
XTRK	CM	G210/D5	C8L
XTRL	CM	E107/B3	C8L
XTRL	CM	F507/B3	C8L
XTRL	CM	G207/B3	C8L
XTS	CM	E211/G4	C5L
XTS	CM	E527/H5	C5L
XTS1	CM	E211/G4	C8L
XTS1	CM	E527/H5	C8L
XTV	CM	E111/A6	T47R
XT1	CM	F212/D1	C4L
XT2	CM	F213/A2	C4L
XT5	CM	F213/G2	C6L
XVGB	CM	E407/C7	C5L
XVGB	CM	E409/D1	C5L
XVGB	CM	E410/G4	C5L
XVGB	CM	E411/H4	C5L
Z	PC	E104/B8,F8	
Z	PC	F504/B8,F8	
Z	PC	G204/B8,F8	
Z	OS	G825/E0	
0,1	SR	G116/E8	
1F	CM	E517/E4	C38R
1FA	CM	E517/F4	C38R
1SE	CM	F214/A4	C26L
10	SR	G116/A8	
10LV	CM	E520/E3	C10L
10TLF	CM	E507/F8	C37L
11X	CM	E110/E5	T26R
12LV	CM	E520/E3	C10L
2	SR	G116/D8	
2-3TLF	CM	E507/A8	C37L
2CK	IR	G117/B0	
2F	CM	E517/F4	C38R
2FA	CM	E517/G4	C38R
2G	CM	E509/G4	C38L
2GA	CM	F214/B4	C26L
2TLF	CM	E507/A8	C37L
20F	CM	E510/A6	C40L
3G	CM	E509/G7	C38L
3NA	CM	F214/B4	C26L
3TLF	CM	E507/B8	C37L
4	SR	G116/C8	
4DG	IMGS	F212/F9	
4NE	CM	F214/B4	C26L
4TLF	CM	E507/B8	C37L
40F	CM	E510/B6	C40L
5DG	IMGS	F212/F9	
5ST	CM	F214/C4	C26L
5TLF	CM	E507/C8	C37L
6NT	CM	F214/C4	C26L
6TFA	CM	E507/C8	C11R
6TLF	CM	E507/D8	C37L
60F	CM	E510/C6	C11R
7	SR	G116/B8	
70	CM	E510/D6	C40L
7RN	CM	F214/D4	C26L
7TFA	CM	E507/D8	C11R
7TLF	CM	E507/D8	C37L
8SP	CM	F214/D4	C26L
8TLF	CM	E507/E8	C37L
9NP	CM	F214/E4	C26L
9TLF	CM	E507/E8	C37L

JACKS

DESIG	CKT	LOC	EOPT LOC *
CK3	SR	G116/G3	
IN	SR	G116/A0,B0	
IRMB	JLK	G118/G5	
IRMC MB	JLK	E105/B3,B6,B9	
IRMC MB	JLK	G205/F3,F6,F9	
JS-	LL	E524/E0,E1	
JS-	TL	E524/E4,E5	
JS0-9	TL	E528/F4	
JS0-9	TL	E529/F4	
KP	SR	G116/G5	
MB	JLK	E209/C9	
MB	JLK	F207/F3	
MB	JLK	F413/C7	
MB	JLK	G114/D9	
MB	JLK	G115/D9	
MB	OGT JK	G132/C8	
MB	JLK	G133/C9	
MB	JLK	G135/C9	
MB	JLK	G813/B8	
MB	JLK	G816/C9	
MB	JLK	G826/C9	
MBE	ALL	E408/D9	
MBO	ALL	E408/B9	
MMB	JLK	E106/D2	
MMB	JLK	F506/D2	
MMB	JLK	G206/D2	
NMB	NG	E306/G1	
NMB	NG	G504/F1,G1	
OF-	T-REG	E117/G4	
ORMC MB	JLK	E105/B3,B6,B9	
ORMC MB	PC	F505/B3,B6,B9	
ORMC MB	JLK	G205/B3,B6,B9	
PC-	T-REG	E117/F4	
SCMB	JLK	F204/B9;C9	
SP	SR	G116/G1	
T	JLK	G114/E9	
T	ITT	G115/B1	
T	JLK	G115/D9	
T	OGT JK	G132/C8	
T	ITT	G133/B1	
T	JLK	G133/C9	
T	ITT	G135/B1	
T	JLK	G135/D9	
T	ITT	G816/B1	
T	JLK	G816/D9	
T	IT	G817/B2	
T	ITT	G826/B1	
T	JLK	G826/D9	
T	IT	G827/B2	
TRMB	TRC	E807/D4	
TRMB	TRC	F407/D4	
TRMB	TRC	G807/D4	
TRMB-CM	JLK	E807/D8	
TRMB-CM	JLK	F407/D7	
TRMB-CM	JLK	G807/D7	

* FOR EXPLANATION OF EOPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

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KEYS

DESIG	CKT	LOC	EQPT LOC *
AR	MISC	E106/C8	
AR	PC	E206/D9	
AR	PCMB	E307/A7,E7	
AR	PCMB	E405/A7,E7	
AR	MISC	G206/C8	
AR	PCMB	G505/A7,E7	
A0-9	MTC	E115/A1	
A0-9	MTC	E143/G0	
A0-9	MTC	F515/B2	
A0-9	MTC	G212/B1	
A0-9	MTC	G220/G0	
BAT	JLK	E106/E9	
BAT	JLK	F506/E9	
BAT	JLK	G206/E9	
BB	MTC	E142/B2	
BB	MTC	G219/B2	
B0-9	MTC	E115/A1	
B0-9	MTC	E143/G1	
B0-9	MTC	F515/C2	
B0-9	MTC	G212/B1	
B0-9	MTC	G220/G1	
CCT	JLK	E530/D1	
CCT	JLK	E535/G8	
CGB	MTC	E113/E1	
CGT	JLK	E530/E1	
CHT	MTC	E209/A4	
CH0-9	MTC	E522/C2,D1	
CMTCA	JLK	E140/A5	
CMTCA	JLK	G142/A5	
CMTCB	JLK	E140/C5	
CMTCB	JLK	G142/C5	
CNR	MTC	E112/C1	
CON	MTC	E535/C1,D1	
CRU0-9	MTC	E113/D1	
CRU0-9	MTC	E410/E1	
CRU0-9	MTC	E411/F1	
CSGA	MTC	E113/E1	
CSGB	MTC	E113/F1	
CST0-9	MTC	E410/B1	
CST0-9	MTC	E411/C1	
CST0,1,2,4,7	MTC	E113/A1	
CST0,1,2	MTC	E113/A1	
CSU0-9	MTC	E113/B1	
CSU0-9	MTC	E410/C1	
CSU0-9	MTC	E411/D1	
CTR	IMGS	F208/A6	
CTR	IMGS	F209/A6	
CTR	IMGS	F411/D6	
C0-9	MTC	E115/B1	
C0-9	MTC	E143/G2	
C0-9	MTC	F515/C2	
C0-9	MTC	G212/C1	
C0-9	CM	G220/G2	
DC	AMRST	G104/E1	
DCK	MTC	G118/C9	
DT	MTC	G120/G4	
D0-9	MTC	E115/C1	
D0-9	MTC	E143/G3	
D0-9	MTC	F515/D2	
D0-9	MTC	G212/C1	
D0-9	CM	G220/G3	
EBH	MTC	E507/E2	
EXR	JLK	E134/H5	
E0-9	MTC	E115/C1	
E0-9	MTC	E143/G4	
E0-9	MTC	F515/D2	
E0-9	MTC	G212/D1	
E0-9	CM	G220/G4	
FACD	MTC	E110/E1	
FCG	MTC	E533/G6	
FCG	MTC	E535/D3	
FC1	MTC	F512/A9	
FG0	MTC	E204/G1	
FG1	MTC	E204/G2,G6	
FG1	MTC	E206/H8	
FG1	MTC	F513/A9	
FG1,2	MTC	G211/B2	
FG2	MTC	E204/G5	
FG2	MTC	E206/H8	
FG2	MTC	F513/A8	
FS	MTC	E204/G4	
FS	MTC	E507/F1	
FS0-9	MTC	E204/F1,G1,G3	
FS0-9	MTC	E206/F8,G8	
FS0-9	MTC	G211/D4-F4	
FS0,4,5,6	MTC	F512/D8	
FS0,4,5,6	MTC	F513/E8	
FS0,7,8,9	MTC	F512/E8	
FS0,7,8,9	MTC	F513/F8	
FS1,2,4,7	MTC	F512/C8	
FS1,2,4,7	MTC	F513/C8	
FS1,3,5,8	MTC	F512/C8	
FS1,3,5,8	MTC	F513/D8	
FS2,3,6,9	MTC	F512/D8	
FS2,3,6,9	MTC	F513/D8	
FT0-3	MTC	E114/B1	
FT0-5	MTC	E114/B1	
FT0-5	MTC	E314/A5	
FT0-5	MTC	E408/G8	
FU0-9	MTC	E114/C1	
FU0-9	MTC	E314/B5	
FU0-9	MTC	E408/G5	
FVD0	MTC	F508/B2	
FVD0	MTC	G208/E2	
F0-9	MTC	E115/D1	
F0-9	MTC	E143/G4	
F0-9	MTC	F515/E2	
F0-9	MTC	G212/E1	
F0-9	CM	G220/G5	
GT	MTC	E535/C1	
G0-9	MTC	E115/D1	
G0-9	MTC	E143/G5	
G0-9	MTC	F515/F2	
G0-9	MTC	G212/E1	
G0-9	CM	G220/G5	
HG0-9	MTC	E114/E1	
HG0-9	MTC	E314/F5	
HN7	CM	G214/D5	
HT-MB0-9	MTC	G214/C8-F9	
HT-MG0-9	MTC	G216/C8-F9	
HTR	MTC	E135/F2	
H0-9	MTC	E115/E1	
H0-9	MTC	E143/G6	
H0-9	MTC	G212/H1	
H0-9	CM	G220/G6	
IC-AB	MTC	G208/D0,F2	
IC-FVD	MTC	G208/D0	
IC-NTAN	MTC	F508/B1	
IC-NTAN	MTC	F508/E2	
IC-NTAN	MTC	G208/E1,F2	
IC-OA	MTC	G208/B1,G2	
IC-OB	MTC	G208/C1,F2	
IG0-14	AMRST	G120/E7,F7	
IGC-14	AMRST	G121/E4,F4	
INC	MTC	G120/G5	
IR	MTC	G120/F5	
IRGT	AMRST	G120/E7	
IRGT	AMRST	G121/D2	
IRMC MB	PC	F505/F3,F6,F9	
ITC-RN-	MTC	F214/A9	
JS00-5	MTC	E507/A2-E2,H0	
J0-9	MTC	E115/E1	
J0-9	MTC	E143/G7	
J0-9	MTC	G212/H1	
J0-9	CM	G220/G7	
KRC	MTC	E142/A2	
KRC	MTC	E313/E1	
KRC	MTC	G219/A3	
KRC1,2	MTC	E313/ED	
KY	MTC	E142/A2	
KY	MTC	G219/A2	
K0-9	MTC	E115/F1	
K0-9	MTC	E143/G8	
K0-9	MTC	G212/G1	
K0-9	CM	G220/G8	
LB	MTC	E532/D5,H6	
LBL	MTC	E532/D1,D4,H6	
LGT	MTC	E535/D2	
LR	MTC	G118/B9,C9	
LT1	MTC	E110/D1	
L0-9	MTC	E115/F1	
L0-9	MTC	E143/G8	
L0-9	MTC	G212/G1	
L0-9	CM	G220/G8	
MC-AR	JLK	E107/B9	
MC-AR	JLK	E140/D5	
MC-AR	PC	F507/B9	
MC-AR	JLK	G142/D5	
MC-AR	JLK	G207/B8	
MCC	TRC	E807/D1	
MCC	TRC	F407/D1	
MCC	TRC	G807/D1	
MCOR	TRC	E807/E1	
MCOR	TRC	F407/E1	
MCOR	TRC	G807/E1	
MF	MTC	E111/B1	
MFEB	MTC	E408/G1	
MFSB	MTC	E408/F4,G1	
MLF	MTC	E111/B1	
NTC	MTC	E532/G3	
NTFS	MTC	E204/G3	
NTFS	MTC	E507/F1	
NTTS	MTC	E209/A4,B4	
NTTS	MTC	E507/A1	
OBS	MTC	E111/C1	
OCN	MTC	G207/E1	
OR	MTC	G120/G5	
ORIG	MTC	G120/G5	
OSS	MTC	E507/G1	
OSS	MTC	F204/A0	
OS0-4	MTC	F206/B4	
PBXH	MTC	E507/E1	
PD	MTC	E112/A2	
PHC	MTC	G208/D2	
PMM	MTC	E113/C1	
PS	MTC	E112/A1	
PU	MTC	E532/D1	
PU	MTC	E535/C2,D2	
RA0-3	MTC	E516/B5	
RA0-3	MTC	E516/D5,D6	
RCT1	MTC	E313/B1	
RC1-15	MTC	E313/D1	
REC	MTC	E806/H6	
REC	MTC	F405/G8,H6	
REC	MTC	G805/G8,H6	
RLT	MTC	E107/F2	
ROT	MTC	E314/G5	
ROT	MTC	E806/G8	
ROT	MTC	F405/H8	
ROT	MTC	G805/G8	
ROT	MTC	G814/B2,E2	
ROT	MTC	G814/F8	
RV	MTC	E535/E1	
SCN	MTC	E112/C2	
SDR	MTC	G120/G5	
SGA,B	MTC	F204/D2,E2	
SGA,B	MTC	F207/E1	
SPL	MTC	G208/A2	
SRS0-9	AMRST	G120/B3,D3	
SRS0-9	AMRST	G121/B2	
STM	AMRST	E517/D8	
STP1,2	MTC	E522/C1	
STP1,2	MTC	E525/F0-H0	
STT	AMRST	E517/D8	
STT	AMRST	G120/G7	
TC	MTC	E535/B1	
TCT	MTC	E134/C1	
TCT	MTC	E535/C1,E1	
TGT	MTC	E530/A1	
THC	MTC	G208/D2	
TP	MTC	E113/B1	
TR	PC	E206/A9,C9,E9	
TR	PCMB	E307/A0-A9	
TR	PCMB	E307/E0-E8	
TR	PCMB	E405/A4,A8,B0	
TR	PCMB	E405/E0-E7	
TR	PCMB	E409/A3,D3	
TR	PCMB	G505/A0-A9	
TR	PCMB	G505/E0-E8	
TRS	MTC	E108/F0	
TRS	MTC	F510/F0	
TRS	MTC	G210/F0	
TR2	MTC	E108/E0	
TR2	MTC	F510/E0	
TR2	MTC	G210/E0	
TS	MTC	E507/A1	
TST1	MTC	E209/C0	
TS0-18(EVEN)	MTC	E209/F0	
TS0-19	MTC	E209/C0	
TS1-19(ODD)	MTC	E209/G0	
TT-CP(0-9)	MTC	G215/C8-F8	
TT-CP(0-9)	MTC	G217/C8-F9	
TTL	MTC	E142/B2	
TTL	MTC	E142/D2	
TTL	MTC	G219/C2,D3	
UT0-9	MTC	G218/C8-F9	
VF0-4	MTC	E114/D1	
VF0-4	MTC	E314/F5	
VGT1	MTC	E114/F0,G0	
VGT1	MTC	E314/D4,D5	
VG0-11	MTC	E314/D5	
VG0-13	MTC	E114/F1	
XLH	MTC	E532/F2	
X11	MTC	F508/B2	
X11	MTC	G208/E2	
1-4/2-5/3-6	MFCS	G815/F2	
11	MTC	E110/D0	
11	MTC	F508/B2	
11	MTC	G208/E2	
2DT	MTC	G208/A2	

LAMPS

DESIG	CKT	LOC	EQPT LOC *
ACV	JLK	E535/G8	
AS	TT	E532/B1	
BT-OF	MTC	E107/C0	
BT-OF	MTC	F507/C0	
BT-OF	MTC	G207/C0	
BY	MTC	E536/B0	
CCT	JLK	E530/D1	
CCT	JLK	E535/G8	
CE	CM	F514/G5	
CGT	JLK	E530/E1	
CH	PC	E206/A9	
CH	PCMB	E307/A0,D1	
CH	PCMB	E405/A0,E0	
CH	PCMB	G505/A0,D1	
CK	MTC	G814/F2	
CMCGA	JLK	E140/C5	
CMCGA	JLK	G142/C5	
CMCGB	JLK	E140/F5	
CMCGB	JLK	G142/F5	
CNR	MTC	E112/F1	
CON	CM	E535/C8	
CO	AMRST	G120/A8	
DIS1	MTC	E806/F6	
DIS1	MTC	F405/F6	
DIS1	MTC	G805/F6	
DL-	JLK	E807/F7	
DL-	JLK	F407/F7	
DL-	JLK	G807/F7	
F	CM	E520/G8	
FA	MISC	E106/A8	
FA	MISC	F506/A8	
FA	MISC	G206/A8	
FG	MISC	E106/B8	
FG	MISC	F506/B9	
FG	MISC	G206/B8	
FL1	MTC	E536/F0	
FTC	MTC	E204/H1	
HBS	CM	E308/A2	
HBS	CM	G506/A1	
HG	CM	E407/E7	
HG	CM	E409/C0	
HGB	CM	E407/D7	
HGB	CM	E409/C0	
IRMC	JLK	F506/E8	
IRMC	JLK	G206/E8	
IRP	JLK	F506/E7	
IRP	JLK	G206/E7	
JC	CM	E521/D9	
JG	CM	E510/D4	
JS	CM	E527/H3	
JS	CM	E528/F0	
LBS0,1	CM	E404/B7,D7	
LBS0,1	DTM	E404/F7,H7	
LC	CM	E211/A3	
LC	CM	E528/G5	
LC	CM	E529/G5	
LFS	CM	E404/B2,D2	
LFS	DTM	E404/E3,G3	
LG	CM	E407/B7	
LHMT	MTC	E532/F4	
LK	AMRST	G120/A7	
LK	IR	G134/C7	
LK2	MTC	E806/F0	
LK2	MTC	F405/F0	
LK2	MTC	G805/F0	
LLCO	JLK	E404/F9	
LLJ	MTC	E533/G3	
LOB	CM	E604/F4	
LR	CM	E520/A5	
LS	CM	E526/H4	
LSA	CM	E526/H4	
LV	CM	E211/E5	
L0	AMRST	G120/A6	
M-	JLK	E106/D8	
M-	JLK	F506/D8	
M-	JLK	G206/D8	
MA	CM	F207/D5	

* FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

ISSUE	DWG SIZE	
5	C2	APPARATUS INDEX
A508	SFD-10-01	BELL LABORATORIES

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LAMPS

DESIG	CKT	LOC	EQPT LOC *
MB,C	CM	F207/D4	
MFG	JLK	E106/D7	
MFG	JLK	F506/D9	
MFG	JLK	G206/D7	
MPP	CM	E408/B4,E4	
MPP	MTC	E408/G4	
MRL	MTC	E107/D0	
MRL	MTC	F507/D0	
MRL	MTC	G207/D0	
NBS1-4	CM	E306/A3,B3	
NBS1-4	CM	G504/B2,C2	
NGB	CM	E312/F1	
NGC	JLK	E306/E0	
NGC	JLK	G504/E0	
NGKB	CM	E309/F4	
NGKB	CM	G508/F4	
NGS	CM	E306/A4	
NGS	CM	G504/B4	
NMB	NG	E306/G1	
NMB	NG	G504/G1	
NTB	MTC	E532/C4	
OFL	MTC	E536/A0	
OH	AMRST	G120/A7	
OK	AMRST	G814/F5	
ORMC	JLK	E106/E8	
ORP	JLK	E106/E7	
OSA	CM	F205/B0	
OSB	CM	F205/E0	
PN	CM	E504/A0	
PNA	CM	E504/A00	
RA1-9	MTC	E516/B1-F1	
RB	AMRST	G120/A6	
RBT1	MTC	E516/E8	
RB1,2	CM	E117/A9	
RCY	MTC	E516/A1	
RP	MTC	E536/A0	
RS	CM	E117/B9	
S	CM	F207/D2	
SA	CM	F207/D2	
SAR	CM	F207/D3	
SB	MTC	E516/A7	
SBM	CM	F207/D3	
SCR	CM	F207/D3	
SH	CM	F206/H3	
SH	CM	F411/F2	
SKA	CM	F205/F4	
SKB	CM	F205/D4	
SM	IR	G106/G6	
SMB	CM	F206/G1	
STP	MTC	E408/G1	
TA	MISC	E106/B8	
TA	MISC	F506/C9	
TA	MISC	G206/B8	
TB	CM	E209/F5	
TB	MTC	E516/C7	
TBS	CM	E308/D2	
TBS	CM	G506/E0	
TBS0-4	CM	E206/B1-B3	
TCT	MTC	E530/C1	
TFS	CM	E206/F0	
TLH	MTC	E533/G8	
TO	JLK	F207/H3	
TO	JLK	F413/D7	
TO	JLK	G118/H5	
TO	JLK	G815/D8	
TO	JLK	G824/G3	
TP	MTC	E536/B0	
TRL	MTC	E107/A0	
TRL	MTC	F507/B0	
TRL	MTC	G207/B0	
TRT	MISC	E106/C8	
TRT	MISC	F506/C9	
TRT	MISC	G206/C8	
TS	TT	E532/A0	
TSK	MTC	E209/A5	
TSM	CM	E211/F2	
TSM	CM	E527/H6	
TT	MTC	E209/D0	
TXP	CM	E533/F8	
TXP1	CM	E533/F8	
UBS	CM	E311/D1	
UBS	CM	G507/D1	
VGB	CM	E407/C7	
VGB	CM	E409/C1	
VGB	CM	E410/G3	
VGB	CM	E411/H4	
WF	CM	E312/D1	
WF	CM	G509/D1	
WG	CM	E312/C1	
WG	CM	G509/C1	
WL	CM	E312/B1	
WL	CM	G509/B1	
X	AMRST	E517/E8	
XTSK	MTC	E209/A5	
1	MTC	E536/E0	
1*	MTC	E536/F0	
2	MTC	E536/C0	
2*	MTC	E536/C0	
2*	MTC	E536/F0	
3	MTC	E536/C0	
3*	MTC	E536/C0	
4	MTC	E536/D0	
5	MTC	E536/D0	

SWITCHES

DESIG	CKT	LOC	EQPT LOC *
A	MTC	E115/A1	
A	MTC	E143/G0	
A-L	MTC	G212/B1-G1	
A-L	MTC	G220/G0-G8	
A0-9	MTC	F515/B2	
B	MTC	E115/A1	
B	MTC	E143/G1	
B0-9	MTC	F515/C2	
C	MTC	E115/B1	
C	MTC	E143/G2	
CH0-9	MTC	E522/C2,D1	
CL	MTC	E110/B2	
CRU	MTC	E113/D1	
CRU	MTC	E410/D1	
CRU	MTC	E411/E1	
CST	MTC	E113/A1	
CST	MTC	E410/B1	
CST	MTC	E411/C1	
CSU	MTC	E113/B1	
CSU	MTC	E410/C1	
CSU	MTC	E411/D1	
C0-9	MTC	F515/C2	
D	MTC	E115/C1	
D	MTC	E143/G3	
D0-9	MTC	F515/D2	
E	MTC	E115/C1	
E	MTC	E143/G4	
E0-9	MTC	F515/D2	
F	MTC	E115/D1	
F	MTC	E143/G4	
FS	MTC	E204/F0	
FS	MTC	E206/E9	
FS	MTC	F512/C9,E9	
FS	MTC	F513/C9,E9	
FS	MTC	G211/D4	
FS	MTC	G211/F4	
FT	MTC	E114/B1	
FT	MTC	E314/A5	
FT	MTC	E408/G8	
FU	MTC	E114/C1	
FU	MTC	E314/B5	
FU	MTC	E408/F5	
F0-9	MTC	F515/E2	
G	MTC	E115/D1	
G	MTC	E143/G5	
G0-9	MTC	F515/F2	
H	MTC	E115/E1	
H	MTC	E143/G6	
HG	MTC	E114/E1	
HG	MTC	E314/E5	
HT-MB	MTC	G214/A9	
HT-MB	MTC	G216/A9	
IC	MTC	F508/B0	
IC	MTC	F508/D2	
IC	MTC	G208/B1,B2,F2	
ICL	MTC	F508/E2	
ICL	MTC	G208/G2	
IRG	AMRST	G120/D7,E7,G7	
IRG	AMRST	G121/D3,G5	
ITC-RN-	MTC	F214/A9	
J	MTC	E115/E1	
J	MTC	E143/G7	
JC	MTC	G208/E0	
JS00-5	MTC	E507/A2-E2,H0	
K	MTC	E115/F1	
K	MTC	E143/G8	
L	MTC	E115/F1	
L	MTC	E143/G8	
M	MTC	E143/F9	
M	CM	G220/F9	
MB	IAO	E209/F9	
ORG	MTC	E111/B2	
OS	MTC	F206/C3,C5	
RA	MTC	E516/B5	
RA	MTC	E516/D7	
RA	MTC	E516/E6	
RAU	MTC	E516/B5	
RAU	MTC	E516/E7	
RCU	MTC	E313/B1	
RG	MTC	E111/B2	
SM0-9	RSW	E536/G9	
SRS	AMRST	G120/A3,C3	
SRS	AMRST	G121/B1,B2	
TBS	MTC	E308/F1	
TRNA	MTC	E110/D2	
TRNA	MTC	F508/C2	
TRNA	MTC	G208/E2	
TRNB	MTC	F508/C1	
TRNB	MTC	G208/C2	
TSU	MTC	E209/B0-E0	
TT-CP	MTC	G215/A8	
TT-MB	MTC	G217/A8	
UT	MTC	G218/A9	
VF	MTC	E114/D1	
VF	MTC	E314/F5	
VGU	MTC	E314/D5	
VGU0-3	MTC	E114/G1	
VGU0-9	MTC	E114/F1,G1	

HOLD MAGNETS

DESIG	CKT	LOC	EQPT LOC *
ENTC	MTC	E539/F0	
HOLD-	RSW	E537/D9	
HOLD-	RSW	E711/B6	
J-	LL	E533/B4	
J-	TL	E533/B6	
J-	TL	E710/C4,F4	
J-	LL	E710/C4,G4	
J-	TL	F416/B4	
J-	LL	F416/C3	
J-	TL	F417/B4	
J-	LL	F417/C5	
J-	LL	G135/C5	
J-	TL	G135/C5	
J-	LL	G816/C5	
J-	TL	G816/C5	
J-	TL	G826/C5	
J-	LL	G826/C5	
J0-9	LL	G133/C5	
J0-9	TL	E528/B3	
J0-9	TL	E529/B3	
J0-9	LL	E529/C0	
J0-9	TL	G114/C3	
J0-9	LL	G114/D3	
J0-9	TL	G115/C5	
J0-9	LL	G115/D5	
J0-9	LL	G132/C2	
J0-9	LL	G132/C3	
J0-9	TL	G133/B5	
J0-9	TL	G817/C6	
J0-9	LL	G817/D7	
J0-9	TL	G827/C6	
J0-9	LL	G827/D6	
L-	LL	E533/B3	
L-	LL	E710/C3,G3	
L-	LL	F416/C3	
L-	LL	G135/C5	
L-	LL	G816/C4	
L-	LL	G826/C4	
L0-4	LL	E529/C0	
L0-4	LL	G114/D3	
L0-4	LL	G115/D4	
L0-4	LL	G132/C2	
L0-4	LL	G133/C4	
L0-4	LL	G817/D7	
L0-4	LL	G827/D7	
L00-19	IRL	G104/A2-E4	
L00-19	IRL	G135/H2-H4	
MT	LL	E533/B1	
MT	LL	E539/B8	
MTC	MTC	E533/B0	
MTC	MTC	E539/C0	
SH-	OSL	F206/F8	
SH-	OSL	F411/D8	
SH0	OSL	F208/D2	
SH0	OSL	F209/D2	
SH9	OSL	F208/D4	
SH9	OSL	F209/D4	
SL20-39	IRL	G104/A5-E7	
T-	TL	E533/B7	
T-	TL	E710/C4,F5	
T-	TL	F416/C5	
T-	TL	F417/C4	
T-	TL	G135/C6	
T-	TL	G816/C6	
T-	TL	G826/C6	
T0-9	TL	E528/C6	
T0-9	TL	E529/C6	
T0-9	TL	G114/D4	
T0-9	TL	G115/D5	
T0-9	LL	G132/C3	
T0-9	TL	G133/C6	
T0-9	TL	G817/C6	
T0-9	TL	G827/C5	

* FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

APPARATUS INDEX	DWG SIZE C2	ISSUE 5
BELL LABORATORIES	SFD-10-01	A509

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DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *	DESIG	CKT	LOC	EQPT LOC *
JA	TL	E528/A1																	
JB	TL	E528/A1																	
J0-9	ALL	E526/A7																	
J0-9	TL	E527/A0																	
J0-9	TL	E528/B1																	
LJ0-9	LL	E526/A4																	
L0-9	LL	E526/A1																	
NTC	NTC	E539/B0																	
SM0,1	RSW	E536/A9																	
SM2-9	RSW	E536/D9																	
SS-	OSL	F411/F8																	
SS0-9	OSL	F206/D8																	
SS0-9	IRL	G104/A8,E8																	
S0-9	IRL	G104/A4,B4,E4																	
T0-9	TL	E527/A6																	

* FOR EXPLANATION OF EQPT LOC; REFER TO SHEET NOTE 1 ON SHEET A501.

ISSUE	DWG SIZE	APPARATUS INDEX
5	C2	
A510	SFD-10-01	BELL LABORATORIES

PRINTED IN U.S.A.

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION			
+130	E106/A8	CM	MISC			
+130	E135/G4	PRTD	CM			
+130	F506/A8	CM	MISC			
+130	G206/A8	CM	MISC			
A	E316/D9	CM	MTFC			
A	F405/C9	CM	C108/G5			
A	G511/D9	CM	MTFC			
A0,1,2,4,7	E115/A2	MTC	MTFC	CM	ORMC	OR
A0,1,2,4,7	E133/B5	CM	OSC	OS		
A0,1,2,4,7	E143/A0	CM	MTFC	MTC	AMRST	
A0,1,2,4,7	F210/B2	OR	ORMC	CM		
A0,1,2,4,7	F210/B6	CM	OSC	IMGS		
A0,1,2,4,7	F410/A1	CM	OSC	IMGS		
A0,1,2,4,7	F410/F1	IMGS	IRMC	CM		
A0,1,2,4,7	F416/F7	IMGS	OSC	CM		
A0,1,2,4,7	F417/G6	IMGS	IRMC	CM		
A0,1,2,4,7	F515/B3	MTC	MTFC	CM	IRMC	IMGS
A0,1,2,4,7	G212/B2	MTC	MTFC	CM	IRMC	IR
A0,1,2,4,7	G213/B4	CM	OSC	OS		
A0,1,2,4,7	G220/G0	MTC	AMRST			
A0,1,2,4,7	G810/A3	CM	OSC	OS		
A0,1,2,4,7	G820/A3	CM	OSC	OS		
A'0,1,2,4,7	E133/B5	CM	MTFC			
A'0,1,2,4,7	F210/B5	CM	MTFC			
A'0,1,2,4,7	F416/G8	CM	MTFC			
A'0,1,2,4,7	G213/B3	CM	MTFC			
AA	E306/G0	PCMB	NG			
AA	G504/G0	PCMP	NG			
AB	E306/G0	PCMB	NG			
AB	F208/B4	OSL	IMGS			
AB	F208/D2	OSL	IMGT			
AB	F209/B4	OSL	IMGS			
AB	F209/D2	CSL	IMGT			
AB	F411/A7	IMGS	OSL	IMGT		
AB	G504/F0	PCMB	NG			
AC	G814/F8	AMRST	MTC			
AC-DC	E530/C9	CM	PRTD			
AC-DC	E530/F9	CM	JLK			
AC-DC	E535/E8	CM	DTM			
AD	F214/F4	CM	MTFC			
AD	F214/G5	CM	OSC	IMGS		
AD'	F214/G4	CM	MTFC			
AK	E316/D5	NG	NGC	CM	MTFC	
AK	G511/D5	NG	NGC	CM		
AK	G511/E9	CM	MTFC			
ALA	E140/A6	JLK	MTRC			
ALA	G142/A6	JLK	MTRC			
ALB	E140/C6	JLK	MTRC			
ALB	G142/C6	JLK	MTRC			
ALC	E211/A6	CM	TLC	TL		
ALC	E528/G9	CM	TLC	TL		
ALC	E529/G9	CM	TLC	TL		
ALM	F413/E6	IMGS				
ALM	G118/H5	IR	JLK			
ALM	G815/D7	OS	JLK			
ALM	G824/A3	OS	JLK			
AMA	F213/H6	CM	MTFC			
AMA	F213/H7	CM	OSC	IMGS		
AMB	E106/E6	CM	JLK			
AMB	F506/E6	CM	JLK			
AMB	G206/E6	CM	JLK			
AR	E106/C8	CM	MISC			
AR	F506/C8	CM	MISC			
AR	G206/C8	CM	MISC			
AR0,1,2,4,7	G810/A1	CM	OSC	OS		
AR0,1,2,4,7	G820/A1	CM	OSC	OS		
ART	E535/C5	TL	TLC	CM		
ASB	F207/E2	MTC	CM			
ASM	E211/F6	CM	TLC	TL		
ASM	E527/H7	CM	TLC	TL		
AST	E528/G9	CM	TLC	TL		
AST	E529/G9	CM	TLC	TL		
AST	E533/B9	TL	TLC	CM		
ATT	E535/C5	TL	TLC	CM		
AV	F206/G7	CM	OSC	IMGS		
AV	F411/C2	CM	OSC	IMGS		
AVK1	F207/D8	CM	MTFC			
A0-11	G815/G4	CM	OSGR			
A0-11	G824/G6	CM	OSGR			
B	E106/C8	CM	MISC			
B	E537/D9	IAO	RSW			
B	E711/C6	RSW	IAO			
B	E807/C2	TRC	PRF			
B	F405/C9	CM	C108/G5			
B	F407/C2	TRC	PRF			
B	F506/C8	CM	MISC			
B	G106/F1	IRL	IR			
B	G107/F1	IRL	IR			
B	G121/G2	IRL	AMRST			
B	G206/C8	CM	MISC			
B	G807/C2	TRC	PRF			
B0,1,2,4,7	E115/B2	MTC	MTFC	CM	ORMC	OR
B0,1,2,4,7	E133/C5	CM	OSC	OS		
B0,1,2,4,7	E143/A1	CM	MTFC	MTC	AMRST	
B0,1,2,4,7	F210/C2	OR	ORMC	CM		
B0,1,2,4,7	F210/C6	CM	OSC	IMGS		
B0,1,2,4,7	F410/A3	CM	OSC	IMGS		
B0,1,2,4,7	F410/F3	IMGS	IRMC	CM		
B0,1,2,4,7	F416/F7	IMGS	OSC	CM		
B0,1,2,4,7	F417/G6	IMGS	IRMC	CM		
B0,1,2,4,7	F515/C3	MTC	MTFC	CM	IRMC	IMGS
B0,1,2,4,7	G212/B2	MTC	MTFC	CM	IRMC	IR
B0,1,2,4,7	G213/C4	CM	OSC	OS		
B0,1,2,4,7	G220/G1	MTC	AMRST			
B0,1,2,4,7	G810/A3	CM	OSC	OS		
B0,1,2,4,7	G820/A3	CM	OSC	OS		
B'0,1,2,4,7	E133/C5	CM	MTFC			
B'0,1,2,4,7	F210/C5	CM	MTFC			
B'0,1,2,4,7	F416/G3	CM	MTFC			
B'0,1,2,4,7	G213/C3	CM	MTFC			
BC	G135/E0	ITT	IRL			
BL	G104/C0	IRL	ITT			
BL	G104/G1	AMRST	IRL	ITT		
BL	G106/F1	IRL	IR			
BL	G107/F1	IRL	IR			
BL	G112/H3	ITT	IRL	IR		
BL	G130/G3	ITT	IRL	IR		
BLC	E211/B2	MTC	MTFC	CM	TLC	TL
BLC	E528/G7	MTC	MTFC	CM	TLC	TL
BLC	E529/F9	TL	TLC	CM	MTFC	MTC
BLG	G134/G8	IR	AMRST			
BN	E317/E0	MTFC	CM			
BN	G512/E0	CM	MTFC			
BNK	E309/C8	CM	NGC	NG		
BNK	G508/C8	CM	NGC	NG		
BR0,1,2,4,7	G810/A2	CM	OSC	OS		
BR0,1,2,4,7	G820/A2	CM	OSC	OS		
BRT	E535/C5	TL	TLC	CM		
BS	E407/B3	LL	LLC	CM		
BSM	E211/H6	CM	TLC	TL		
BSM	E527/H8	CM	TLC	TL		
BST	E528/G9	CM	TLC	TL		
BST	E529/G9	CM	TLC	TL		
BST	E533/B9	TL	TLC	CM		
BS0,1	E404/A7	CM	LLC			
BS0,1	E404/E7	DTM	LLC			
BS0-4	E206/B1,B2	TLC	CM			
BS1-4	E306/A2-C2	NGC	CM			
BS1-4	G504/B1,C1	NGC	CM			
BT	E107/C2	MTC	MTFC	CM	ORMC	OR
BT	E107/C5	ORMC	PC			
BT	E209/D9	TL	OGT			
BT	E209/F9	TL	IAO			
BT	F507/C2	MTC	MTFC	CM	IRMC	IMGS
BT	F507/[illegible]	PC	IRMC			
BT	G13[illegible]	IR	IRMC	CM	MTFC	
BT	G207/C2	MTC	MTFC	CM	IRMC	IR
BT	G207/C5	IRMC	PC			
BTT	E535/C5	TL	TLC	CM		
BT00-19	E209/C6	CM	TLC	TL		
B1,2	E209/B9	JLK	OGT			
B1,2	G114/D7	OGT	MDF	JLK		
B1,2	G115/D8	MDF	JLK			
B1,2	G132/C6	OGT	MDF	OGT JK		
B1,2	G133/C8	MDF	JLK			
B1,2	G135/D8	MDF	JLK			
B1,2	G816/C9	MDF	JLK			
B1,2	G826/C9	MDF	JLK			
C	E106/F8	JLK	PC			
C	F506/F8	JLK	PC			
C	G206/F8	JLK	PC			
C0,1,2,4,7	E115/B2	MTC	MTFC	CM	ORMC	OR
C0,1,2,4,7	E133/C5	CM	OSC	OS		
C0,1,2,4,7	E143/A2	CM	MTFC	MTC	AMRST	
C0,1,2,4,7	F210/C2	OR	ORMC	CM		
C0,1,2,4,7	F210/C6	CM	OSC	IMGS		
C0,1,2,4,7	F410/A4	CM	OSC	IMGS		
C0,1,2,4,7	F410/F4	IMGS	IRMC	CM		
C0,1,2,4,7	F416/F7	IMGS	OSC	CM		
C0,1,2,4,7	F417/G6	IMGS	IRMC	CM		
C0,1,2,4,7	F515/C3	MTC	MTFC	CM	IRMC	IMGS
C0,1,2,4,7	G212/C2	MTC	MTFC	CM	IRMC	IR
C0,1,2,4,7	G213/C4	CM	OSC	OS		
C0,1,2,4,7	G220/G2	MTC	AMRST			
C0,1,2,4,7	G810/A4	CM	OSC	OS		
C0,1,2,4,7	G820/A4	CM	OSC	OS		
C'0,1,2,4,7	E133/C5	CM	MTFC			
C'0,1,2,4,7	F210/C5	CM	MTFC			
C'0,1,2,4,7	F416/G8	CM	MTFC			
C'0,1,2,4,7	G213/C3	CM	MTFC			
CB	E105/A1	ORMC	PC			
CB	E105/E1	IRMC	PC			
CB	E105/G3	CM	PC	JLK		
CB	F505/A1	ORMC	PC			
CB	F505/B3	JLK	PC	CM		
CB	F505/E1	IRMC	PC			
CB	F505/F3	JLK	PC	CM		
CB	G205/A1	ORMC	PC			
CB	G205/B3	JLK	PC	CM		
CB	G205/E1	IRMC	PC			
CBS	E104/A1	OR	ORMC			
CBS	E104/E1	IR	IRMC			
CBS	F504/A1	OR	ORMC			
CBS	F504/E1	IMGS	IRMC			
CBS	G204/A1	OR	ORMC			
CBS	G204/E1	IR	IRMC			
CB1	E105/A1	ORMC	PC			
CB1	E105/E1	IRMC	PC			
CB1	F505/A1	ORMC	PC			
CB1	F505/E1	IRMC	PC			
CB1	G205/A1	ORMC	PC			
CB1	G205/E1	IRMC	PC			
CCT	E530/D2	JLK	CM			
CGA	E113/E2	MTC	MTFC	CM	ORMC	OR
CGA	E410/E2	MTC	CM	LLC	LL	
CGA	E411/E2	MTC	CM	LLC	LL	
CGB	E113/F2	MTC	MTFC	CM	ORMC	OR
CGB	E410/F2	MTC	CM	LLC	LL	
CGB	E411/F2	MTC	CM	LLC	LL	
CGT	E530/B2	MTFC	CM	JLK		
CHA	E525/E4	CM	MTFC			
CH0-9	E525/E7	CM	MTFC			
CI	E807/B7	MTFC	CM			
CI	F407/B7	MTFC	CM			
CI	G807/B7	MTFC	CM			
CK	E206/A6	CM	PC			
CK	E206/A6	DTM	PC			
CK	E206/B4	CM	MTFC			
CKG	E108/G1	MTFC	CM			
CKG	E108/G6	CM	ORMC			
CKG	F405/D9	CM	ORMC			
CKG	F510/B1	MTFC	CM			
CKG	F510/G6	CM	IRMC			
CKG	G210/G1	MTFC	CM			
CKG	G210/G6	CM	IRMC			
CKG1	E108/G1	MTC	MTFC	CM		
CKG1	F405/D9	CM	MTFC	MTC		
CKG1	F510/G0	MTC	MTFC	CM		
CKG1	G210/G1	MTC	MTFC	CM		
CKR	E317/F9	CM	MTFC			
CKR	G512/F8	CM	MTFC			

LEAD INDEX

DWG SIZE C2

ISSUE 5

BELL LABORATORIES SFD-10-01

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DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
CK0	E317/C9	CM	MTFC					
CK0	G512/C8	CM	MTFC					
CLG	E212/B0	MTFC	CM					
CLK	E212/E0	MTFC	CM					
CLT1	E212/C0	MTFC	CM					
CLT2	E212/A0	MTFC	CM					
CL00-10	G108/B5	IRL	IR					
CL00-10	G126/5B	IRL	IR					
CN	F506/H5	MTFC	PC					
CN-	E106/G5	MTFC	ORMC	PC	OR	AMRST		
CNG	E106/H5	MTFC	ORMC					
CNR	E112/F2	MTC	MTFC	CM	ORMC	OR		
CNS	E130/E9	CM	MTFC					
CN0-3	G206/G5	MTFC	PC	IR	AMRST			
CON	E530/C2	MTC	MTFC	CM				
CP0,1,2,4,7	F212/A7	CM	MTFC					
CP0,1,2,4,7	F212/B7	CM	OSC	IMGS				
CP1	F208/A5	IMGS	JLK					
CP1	F209/B5	IMGS	JLK					
CP1	F411/E7	JLK	IMGS					
CP3	F208/A6	JLK	IMGS					
CP3	F209/B6	JLK	IMGS					
CP3	F411/E6	IMGS	JLK					
CR	E112/E2	MTC	MTFC	CM	ORMC	OR		
CR0,1,2,4,7	G810/A2	CM	OSC	OS				
CR0,1,2,4,7	G820/A2	CM	OSC	OS				
CRU0,1,2,4,7	E113/D2	MTC	MTFC	CM	ORMC	OR		
CS0-29	E410/B2	MTC	MTFC	CM	LLC	LL		
CS0-29	E411/C2	MTC	MTFC	CM	LLC	LL		
CSG1,2	E410/A2,B2	MTC	MTFC	CM				
CSG1,2	E411/A2	MTC	MTFC	CM				
CTA-	E113/A2	MTC	MTFC	CM	ORMC	OR		
CU0,1,2,4,7	E113/B2	MTC	MTFC	CM	ORMC	OR		
CWA,B	E108/B8	MTRC	PC					
CWA	E140/D3	PC	MTRC					
CWA	G142/D3	PC	MTRC					
CWA,B	F510/B8	MTRC	PC					
CWA,B	G210/B8	MTRC	PC					
CWB	E140/F3	PC	MTRC					
CWB	G142/F3	PC	MTRC					
C0	G120/D1	IR	IRL	AMRST				
D	E111/B1	MTC	MTFC					
D	E111/B4	MTC	MTFC	CM	ORMC	OR		
D	F208/A4	OSL	IMGS					
D	F208/D2	OSL	IMGT					
D	F209/A4	OSL	IMGS					
D	F209/D2	OSL	IMGT					
D	F414/C3	IMGT	OSL	IMGS				
D	F415/C3	IMGT	OSL	IMGS				
D	F416/E5	IMGS	OSL	IMGT				
D	G139/B0	ITT	IRL	IR				
D0,1,2,4,7	E115/C2	MTC	MTFC	CM	ORMC	OR		
D0,1,2,4,7	E133/D5	CM	OSC	OS				
D0,1,2,4,7	E143/A3	CM	MTFC	MTC	AMRST			
D0,1,2,4,7	F210/D2	OR	ORMC	CM	OSC	IMGS		
D0,1,2,4,7	F410/A5	CM	OSC	IMGS				
D0,1,2,4,7	F410/F5	IMGS	IRMC	CM				
D0,1,2,4,7	F416/F7	IMGS	OSC	CM				
D0,1,2,4,7	F417/G6	IMGS	IRMC	CM				
D0,1,2,4,7	F515/D3	MTC	MTFC	CM	IRMC	IMGS		
D0,1,2,4,7	G212/D2	MTC	MTFC	CM	IRMC	IR		
D0,1,2,4,7	G213/D4	CM	OSC	OS				
D0,1,2,4,7	G220/G3	MTC	AMRST					
D0,1,2,4,7	G810/A4	CM	OSC	OS				
D0,1,2,4,7	G820/A4	CM	OSC	OS				
D'0,1,2,4,7	E133/D5	CM	MTFC					
D'0,1,2,4,7	F210/D5	CM	MTFC					
D'0,1,2,4,7	F416/G8	CM	MTFC					
D'0,1,2,4,7	G213/D3	CM	MTFC					
DCK	G118/5B	IR	CM	MTFC	MTC			
DCT	E712/D2	CM	MTFC	MTC				
DCT	E712/F3	MTC	TT					
DCT	F404/D2	CM	MTFC	MTC				
DCT	F404/F3	MTC	TT					
DCT	G804/E1	CM	MTFC	MTC				
DCT	G804/F2	MTC	TT					
DCT1	E712/D9	CM	MTFC					
DCT1	F404/D9	CM	MTFC					
DCT1	G804/E8	CM	MTFC					
DCT2	E712/D8	CM	MTFC					
DCT3	G804/E7	CM	MTFC					
DIS	E517/E1	CM	AMRST					
DIS	E806/D8	CM	MTFC	MTC				
DIS	F405/E8	MTC	MTFC	CM	C517/E5			
DIS	G805/D8	CM	MTFC	MTC				
DIS1	E806/D6	CM	MTFC	MTC				
DIS1	F405/D6	CM	MTFC	MTC				
DIS1	G805/D6	CM	MTFC	MTC				
DL	E807/F8	JLK	CM					
DL	F407/F8	JLK	CM					
DL	G807/F7	JLK	CM					
DLB	E807/F8	JLK	CM					
DLB	F407/F8	JLK	CM					
DLB	G807/F7	JLK	CM					
DPG	G827/G4	IRL	IR					
DR	E127/E9	MTFC	CM					
DR-	E106/G2	PRF	MTFC					
DR-	F506/G2	PRF	MTFC					
DR-	G206/G2	MTFC	PRF					
DRT0,1	E106/H2	PRF	MTFC					
DRT0,1	F506/H2	PRF	MTFC					
DRT0,1	G206/G2	MTFC	PRF					
DTK	E604/D1	CM	LLC	LL	LLMC	DTM	MTFC	MTC
DTK	E604/E1	CM	MTFC	MTC				
D2	G114/G9	MFCS	OS					
D2	G816/G7	MFCS	OS					
E0,1,2,4,7	E115/C2	MTC	MTFC	CM	ORMC	OR		
E0,1,2,4,7	E133/D5	CM	OSC	OS				
E0,1,2,4,7	E143/A3	CM	MTFC	MTC	AMRST			
E0,1,2,4,7	F210/D2	OR	ORMC	CM	OSC	IMGS		
E0,1,2,4,7	F410/A6	CM	OSC	IMGS				
E0,1,2,4,7	F410/F6	IMGS	IRMC	CM				
E0,1,2,4,7	F416/F7	IMGS	OSC	CM				
E0,1,2,4,7	F417/G6	IMGS	IRMC	CM				
E0,1,2,4,7	F515/D3	MTC	MTFC	CM	IRMC	IMGS		
E0,1,2,4,7	G212/D2	MTC	MTFC	CM	IRMC	IR		
E0,1,2,4,7	G213/D4	CM	OSC	OS				
E0,1,2,4,7	G220/G3	MTC	AMRST					
E0,1,2,4,7	G810/A4	CM	OSC	OS				
E0,1,2,4,7	G820/A4	CM	OSC	OS				
E'0,1,2,4,7	E133/D5	CM	MTFC					
E'0,1,2,4,7	F210/D5	CM	MTFC					
E'0,1,2,4,7	F416/G8	CM	MTFC					
E'0,1,2,4,7	G213/D3	CM	MTFC					
ECN	F507/E2	CM	IRMC					
ECN	G207/E2	MTC	MTFC	CM	IRMC			
EF	E520/G1	TL	TLC	CM	MTFC			
EN	E309/D3	MTFC	CM					
EN	G508/D3	MTFC	CM	NGC	NG			
EN1	E309/C8	CM	NGC	NG				
EN1	G508/C8	CM	NGC	NG				
ETS0,1	E209/E2	MTC	CM					
EW	E309/B8	CM	NGC	NG				
EX	E134/G4	CM	JLK					
EX	E134/H4	CM	P-REG					
EXA	E134/G4	CM	JLK					
EXB	E134/A2	MTFC	CM					
EXG	E134/A2	MTFC	CM					
EXT	E134/C2	MTC	MTFC	CM				
F	E209/E9	TL	OGT					
F	E209/F9	TL	IAO					
F	F208/G7	IMGS	IRMC	CM				
F	F209/G7	IMGS	IRMC	CM				
F	F414/E7	IMGS	IRMC	CM				
F	F415/E7	IMGS	IRMC	CM				
F	F416/F2	IMGS	F417/G6					
F	F417/G6	F416/F2	IMGS	IRMC	CM			
F	G115/D1	ITT	IRL	IRMC	CM			
F	G133/D1	ITT	IRL	IRMC	CM			
F0,1,2,4,7	E115/D2	MTC	MTFC	CM	ORMC	OR		
F0,1,2,4,7	E133/E5	CM	OSC	OS				
F0,1,2,4,7	E143/A4	CM	MTFC	MTC	AMRST			
F0,1,2,4,7	F210/E2	OR	ORMC	CM	OSC	IMGS		
F0,1,2,4,7	F410/A7	CM	OSC	IMGS				
F0,1,2,4,7	F410/F7	IMGS	IRMC	CM				
F0,1,2,4,7	F416/F7	IMGS	OSC	CM				
F0,1,2,4,7	F417/G6	IMGS	IRMC	CM				
F0,1,2,4,7	F515/E3	MTC	MTFC	CM	IRMC	IMGS		
F0,1,2,4,7	G212/E2	MTC	MTFC	CM	IRMC	IR		
F0,1,2,4,7	G213/D4	CM	OSC	OS				
F0,1,2,4,7	G220/G4	MTC	AMRST					
F0,1,2,4,7	G810/A5	CM	OSC	OS				
F0,1,2,4,7	G820/A5	CM	OSC	OS				
F'0,1,2,4,7	E133/E5	CM	MTFC					
F'0,1,2,4	F416/G8	CM	MTFC					
F'7	E133/E5	CM	MTFC					
F'0,1,2,4,7	G213/E3	CM	MTFC					
FA	E106/B8	CM	MISC					
FA	E211/B8	TL	IAO					
FA	E211/B8	TL	OGT					
FA	E533/B9	TL	IAO					
FA	E537/F6	TL	IAO					
FA	E711/D7	IAO	TL					
FA	F506/B8	CM	MISC					
FA	G206/B8	CM	MISC					
FAC	E110/C1	MTC	MTFC					
FAC	E110/C3	MTC	MTFC	CM	ORMC	OR		
FAK	E211/C2	MTFC	CM	TLC	TL			
FA1	E106/B8	CM	MISC					
FA1	F506/B8	CM	MISC					
FA1	G206/B8	CM	MISC					
FB	E108/B8	MTRC	PC					
FB	E140/B3	PC	MTRC					
FB	F510/B8	MTRC	PC					
FB	G142/B3	PC	MTRC					
FB	G210/B8	MTRC	PC					
FBK	E211/D1	MTC	MTFC	CM	TLC	TL		
FB0	E204/C1	CM	TLC					
FB0-29	E204/C1-C9	CM	TLC					
FB1	E108/C8	MTRC	PC					
FB1	E140/C3	PC	MTRC					
FB1	F510/C8	MTRC	PC					
FB1	G142/C3	PC	MTRC					
FB1	G210/C8	MTRC	PC					
FCG	E535/D4	MTFC	CM					
FCK	E208/G8	CM	MTFC	MTC				
FG	E106/B8	MISC	CM	JLK				
FG	F506/C9	MISC	CM	JLK				
FG	G206/B8	MISC	CM	JLK				
FG0,1	F512/A5,B5	IMGS	IRMC	CM	MTFC	MTC		
FG0-2	E206/F6	CM	MTFC	MTC				
FG0-2	F417/D6	IMGS	IRMC	CM				
FG0-2	F513/A5,B5	IMGS	IRMC	CM	MTFC	MTC		
FG0-2	G109/F4	IRL	IR					
FG0-2	G127/G5	IRL	IR					
FG0-2	G211/B1,C1	IR	IRMC	CM	MTFC	MTC		
FLG	E108/G1	MTFC	CM					
FLG	F511/E8	CM	MTFC					
FLG	G209/F8	CM	MTFC					
FM	E517/A1	MTFC	CM					
FM	E525/F2	MTFC	CM					
FML	E207/D8	CM	MTFC					
FR	F506/H5	MTFC	PC					
FR-	E106/G5	MTFC	ORMC	PC	OR	AMRST		
FRG	E106/G5	MTFC	ORMC					
FR0-2	G206/G5	MTFC	PC	IR	AMRST			
FS0-19	E205/A1-A9	CM	MTFC					
FS20-29	E205/E1-E5	CM	MTFC					
FT0-3	E114/B2	MTC	MTFC	CM	OSC	OS		
FT0-3	E114/B2	MTC	MTFC	CM	ORMC	OR		
FT'0-3	E114/B3	MTFC	CM					
FTC	E207/E4	CM	MTFC	MTC				
FTCK	E207/E4	CM	MTFC	MTC				
FTC0-29	E204/E0-E9	MTC	CM	TL				
FTK1	E315/H6	CM	MTFC					
FTK1	E603/H6	CM	MTFC					
FTT0-5	E314/A9	MTC	E315/A0	MTFC	CM			
FTT0-5	E603/A0	MTFC	CM					
FTT0-5	G510/A0-B0	MTFC	CM					
FT0-5	E312/B7	NG	NGC	CM				
FT0-5	G509/B7	NG	NGC	CM				

ISSUE	DWG SIZE	LEAD INDEX
5	C2	

A602 SFD-10-01 BELL LABORATORIES

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DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
FU0,1,2,4,7	E114/C2	MTC	MTFC	CM	OSC	OS		
FU0,1,2,4,7	E114/C2	MTC	MTFC	CM	ORMC	OR		
FU'0,1,2,4,7	E114/C3	MTFC	CM					
FUT0,1,2,4,7	E315/C2	MTFC	CM					
FUT0,1,2,4,7	G510/C2	CM	MTFC					
FUT0-9	E314/B9,C9	MTC	E315/C0	MTFC	CM			
FUT0-9	E603/C0	MTFC	CM					
FUT0-9	G510/C0	MTFC	CM					
FU0-9	E312/C7	NG	NGC	CM				
FU0-9	G509/C7	NG	NGC	CM				
FVD	G208/D3	MTC	MTFC	CM	IRMC	IR		
F7	E133/E5	CM	OSC	OS				
G	E104/C1	PC	ORMC					
G	E104/F1	PC	IRMC					
G	E537/B9	IAO	RSW					
G	E604/D2	LLC	DTM	MTFC	MTC			
G	E604/E0	MTC	MTFC	CM	LLC	LL		
G	E711/C6	RSW	IAO					
G	E807/B2	TRC	PRF					
G	F407/B2	TRC	PRF					
G	F504/C1	PC	ORMC					
G	F504/F1	PC	IRMC					
G	G204/C1	PC	ORMC					
G	G204/F1	PC	IRMC					
G	G807/B2	TRC	PRF					
G0,1,2,4,7	E115/D2	MTC	MTFC	CM	ORMC	OR		
G0,1,2,4,7	E133/F5	CM	OSC	OS				
G0,1,2,4,7	E143/A5	CM	MTRC	MTC	AMRST			
G0,1,2,4,7	F210/E2	OR	ORMC	CM	OSC	IMGS		
G0,1,2,4,7	F410/A8	CM	OSC	IMGS				
G0,1,2,4,7	F410/F8	IMGS	IRMC	CM				
G0,1,2,4,7	F416/F7	IMGS	OSC	CM				
G0,1,2,4,7	F417/G6	IMGS	IRMC	CM				
G0,1,2,4,7	F515/F3	MTC	MTFC	CM	IRMC	IMGS		
G0,1,2,4,7	G212/E2	MTC	MTFC	CM	IRMC	IR		
G0,1,2,4,7	G213/E4	CM	OSC	OS				
G0,1,2,4,7	G220/G5	MTC	AMRST					
G0,1,2,4,7	G810/A5	CM	OSC	OS				
G0,1,2,4,7	G820/A5	CM	OSC	OS				
G'0,1,2,4,7	E133/F5	CM	MTFC					
G'0,1,2,4,7	F210/E5	CM	MTFC					
G'0,1,2,4,7	F416/G8	CM	MTFC					
G'0,1,2,4,7	G213/E3	CM	MTFC					
GBE	F205/B6	CM	OSC					
GBO	F205/B6	CM	OSC					
GLH	E530/A2	MTFC	CM					
GS1-5	E519/A4	CM	MTFC					
GT	E107/C6	ORMC	PC					
GT	F507/C6	PC	IRMC					
GT	G207/C6	IRMC	PC					
GTL	E605/A1	CM	MTFC					
GTL	F215/C0	MTFC	CM					
GT2	E530/B2	MTFC	CM					
GT5	E530/B2	MTFC	CM					
G0-4	E510/B1	TLC	CM					
G0A	E510/A1	TLC	CM					
G1	E104/B1	PC	ORMC					
G1	E104/F1	PC	IRMC					
G1	F504/B1	PC	ORMC					
G1	F504/F1	PC	IRMC					
G1	G204/B1	PC	ORMC					
G1	G204/F1	PC	IRMC					
H	E533/B0	MTC	MTC	LL				
H	E537/D9	IAO	RSW					
H	E539/D7	MTC	LL					
H	E711/C6	RSW	IAO					
H	G121/E6	AMRST	IR					
H0,1,2,4,7	E115/E2	MTC	MTFC	CM	ORMC	OR		
H0,1,2,4,7	E133/G5	CM	OSC	OS				
H0,1,2,4,7	E143/A6	CM	MTRC	MTC	AMRST			
H0,1,2,4,7	G212/F2	MTC	MTFC	CM	IRMC	IR		
H0,1,2,4,7	G213/F4	CM	OSC	OS				
H0,1,2,4,7	G220/G6	MTC	AMRST					
H0,1,2,4,7	G810/A6	CM	OSC	OS				
H0,1,2,4,7	G820/A6	CM	OSC	OS				
H'0,1,2,4,7	F210/F5	CM	MTFC					
H'0,1,2,4	E133/G4	CM	MTFC					

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
H'7	F416/G8	CM	MTFC					
H'0,1,2,4,7	G213/F3	CM	MTFC					
HB0-9	E308/B6	CM	NGC	NG				
HB0-9	G506/B5	CM	NGC	NG				
HG0,1,2,4,7	E114/E2	MTC	MTFC	CM	ORMC	OR		
HG0,1,2,4,7	E114/E2	MTC	MTFC	CM	OSC	OS		
HG'0,1,2,4,7	E114/E3	MTFC	CM					
HGK	E407/E3	LL	LLC	CM				
HGK	E407/F7	CM	MTFC					
HGK	E409/G1	CM	LLC	LL				
HGK	E532/H8	MTC	MTFC	CM				
HGT0,1,2,4,7	E315/E2	MTFC	CM					
HGT0,1,2,4,7	G510/E2	CM	MTFC					
HGT0-9	E314/E9,F9	MTC	E315/E0	MTFC	CM			
HGT0-9	E603/E0	MTFC	CM					
HGT0-9	G510/E0-F0	MTFC	CM					
HG0-9	E312/C7	NG	NGC	CM				
HG0-9	E407/D3	LL	LLC	CM				
HG0-9	E409/G1	CM	LLC	LL				
HG0-9	G509/C7	NG	NGC	CM				
HM	F206/E8	IMGT	OSL	IMGS				
HM	F208/A4	OSL	IMGS					
HM	F208/D1	OSL	IMGT					
HM	F209/A4	OSL	IMGS					
HM	F209/D1	OSL	IMGT					
HM	F411/E7	IMGS	OSL	IMGT				
HM	G104/E1	AMRST	IRL	IR				
HM	G135/H5	IRL	AMRST					
HMS1	E531/A7	CM	MTFC					
HMS1	E535/G4	MTC	MTFC					
HN0-9	E308/A6-C6	CM	MTFC					
HN0-9	G506/A5-C5	CM	MTFC					
HTK1	E315/H6	CM	MTFC					
HTK1	E603/H6	CM	MTFC					
HTR	E131/B8	CM	MTFC					
HTR	E135/F2	MTC	MTFC	CM				
HTUK	E309/G3	MTFC	CM					
HTUK	G508/G3	CM	MTFC					
HT0,1,2,4,7	G214/A3-D3	IR	IRMC	CM	MTFC	MTC		
HT0,1,2,4,7	G216/A3-D3	IR	IRMC	CM	MTFC	MTC		
H7	F210/F2	OR	ORMC	CM	OSC	IMGS		
H7	F410/A9	CM	OSC	IMGS				
H7	F410/F9	IMGS	IRMC	CM				
H7	F416/F7	IMGS	OSC	CM				
H7	F417/G6	IMGS	IRMC	CM				
H7	F515/F3	MTC	MTFC	CM	IRMC	IMGS		
IM	E108/C8	MTRC	PC					
IM	E140/G3	PC	MTRC					
IM	F510/C8	MTRC	PC					
IM	G142/G3	PC	MTRC					
IM	G210/C8	MTRC	PC					
INC	F508/E3	MTC	MTFC	CM	IRMC	IMGS		
INC	G208/G3	MTC	MTFC	CM	IRMC	IR		
INT	E807/D2	TRC	PRF					
INT	F407/D2	TRC	PRF					
INT	G807/D2	TRC	PRF					
ITR	E108/A1	MTFC	CM					
ITR	G210/A1	MTFC	CM					
J-	E533/B5	TL	TLC	CM				
J0,1,2,4,7	E115/E2	MTC	MTFC	CM	ORMC	OR		
J0,1,2,4,7	E133/G5	CM	OSC	OS				
J0,1,2,4,7	E143/A7	CM	MTRC	MTC	AMRST			
J0,1,2,4,7	G212/F2	MTC	MTFC	CM	IRMC	IR		
J0,1,2,4,7	G213/F4	CM	OSC	OS				
J0,1,2,4,7	G220/G7	MTC	AMRST					
J0,1,2,4,7	G810/A6	CM	OSC	OS				
J0,1,2,4,7	G820/A6	CM	OSC	OS				
J'0,1,2,4,7	E133/G4	CM	MTFC					
J'0,1,2,4,7	G213/F3	CM	MTFC					
JCK	E525/E7	CM	MTFC					
JC0-9	E521/A1	TL	TLC	CM				
JG0-3	E509/A0	CM	MTFC					
JG0-4	E508/A0	CM	MTFC					
JR	E409/A6	LL	ALL					
JS	E409/A6	LL	ALL					
JS00-5	E507/A2	MTC	MTFC	CM				
JS0-9	E527/H1	CM	TLC	TL				

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
JS0-9	E528/C0	TL	TLC	CM				
JT	E409/A6	LL	ALL					
JXPA	E531/D4	CM	MTFC					
JXP1	E531/D4	CM	MTFC					
J0-9	E528/F4	TLC	TL					
J0-9	E529/F4	TLC	TL					
K0,1,2,4,7	E115/F2	MTC	MTFC	CM	ORMC	OR		
K0,1,2,4,7	E133/G5	CM	OSC	OS				
K0,1,2,4,7	E143/A7	CM	MTRC	MTC	AMRST			
K0,1,2,4,7	G212/G2	MTC	MTFC	CM	IRMC	IR		
K0,1,2,4,7	G213/F4	CM	OSC	OS				
K0,1,2,4,7	G220/G7	MTC	AMRST					
K0,1,2,4,7	G810/A7	CM	OSC	OS				
K0,1,2,4,7	G820/A7	CM	OSC	OS				
K'0,1,2,4,7	E133/G4	CM	MTFC					
K'0,1,2,4,7	G213/F3	CM	MTFC					
KJS0	E507/H2	MTC	MTFC	CM				
L	E106/F9	JLK	ALMS					
L	E108/D6	ORMC	OR					
L	E108/E6	ORMC	PC					
L	E312/F3	CM	NGC	NG				
L	E520/C1	TL	TLC	CM				
L	F207/H1	ALMS	JLK					
L	F506/F9	JLK	ALMS					
L	G206/F9	JLK	ALMS					
L0,1,2,4,7	E115/F2	MTC	MTFC	CM	ORMC	OR		
L0,1,2,4,7	E133/G5	CM	OSC	OS				
L0,1,2,4,7	E143/A8	CM	MTRC	MTC	AMRST			
L0,1,2,4,7	G212/G2	MTC	MTFC	CM	IRMC	IR		
L0,1,2,4,7	G213/F4	CM	OSC	OS				
L0,1,2,4,7	G220/G8	MTC	AMRST					
L0,1,2,4,7	G810/A7	CM	OSC	OS				
L0,1,2,4,7	G820/A7	CM	OSC	OS				
L'0,1,2,4,7	E133/G4	CM	MTFC					
L'0,1,2,4,7	G213/F3	CM	MTFC					
LAL	E140/D6	JLK	MTRC					
LAL	G142/D6	JLK	MTRC					
LB	E317/H4	MTFC	CM					
LB	E531/G7	CM	MTFC					
LB0-9	E524/E2	LL	LLC	CM				
LCA	E107/B8	PC	JLK					
LCA	F507/B8	PC	JLK					
LCA	G207/C8	PC	JLK					
LCB	E105/C1	ORMC	PC					
LCB	E105/G1	IRMC	PC					
LCB	F505/C1	ORMC	PC					
LCB	F505/G1	IRMC	PC					
LCB	G205/C1	ORMC	PC					
LCB	G205/F1	IRMC	PC					
LCH	E108/E1	MTFC	CM					
LCH	E807/D2	TRC	PRF					
LCH	F407/D2	TRC	PRF					
LCH	G807/D2	TRC	PRF					
LCK	E211/C1	MTC	MTFC	CM	TLC	TL		
LCK	E528/F6	TL	TLC	CM	MTFC	MTC		
LCK	E529/F6	TL	TLC	CM	MTFC	MTC		
LC0-9	E211/F8	CM	MTFC					
LDT	E134/C2	MTFC	CM					
LFK	F407/A5	LLC	CM	MTFC				
LFK	E408/C1	MTFC	CM	LLC	ALL			
LFS	E405/H6	DTM	LLMC	PCMB				
LH-	E533/B7	TL	TLC	CM				
LHB	E308/D6	CM	NGC	NG				
LHB	G506/D5	CM	NGC	NG				
LHM	E532/D6	MTC	MTFC					
LHMT	E532/D6	MTC	MTFC					
LH0-4	E529/G0	CM	LLC	LL				
LH0-4	E533/B1	LL	LLC	CM				
LH0-9	E524/E6	TL	TLC	CM				
LH0-9	E528/G9	CM	TLC	TL				
LH0-9	E529/F9	TL	TLC	CM				
LI	E531/F7	CM	MTFC					
LK	E107/C9	JLK	ALMS					
LK	E206/E9	ALMS	PC					
LK	E307/A9	ALMS	PCMB					
LK	E405/D7	PCMB	ALMS					
LK	E520/D1	TL	TLC	CM	MTFC			

LEAD INDEX

DWG SIZE	ISSUE
C2	5

BELL LABORATORIES SFD-10-01 A603

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DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
LK	F507/C9	JLK	ALMS					
LK	G104/G1	AMRST	IRL					
LK	G106/F1	IRL	IR					
LK	G107/F0	IRL	IR					
LK	G135/E2	ITT	IRL					
LK	G207/C9	JLK	ALMS					
LK	G505/A9	PCMB	ALMS					
LK1	E140/D5	ALMS	JLK					
LK1	E712/D5	CM	MTFC	MTC				
LK1	F404/D5	CM	MTFC	MTC				
LK1	G142/D5	ALMS	JLK					
LK1	G804/E4	CM	MTFC	MTC				
LK2	E806/D1	CM	MTFC	MTC				
LK2	F405/D1	CM	MTFC	MTC				
LK2,3	G805/D1	CM	MTFC	MTC				
LK3	E806/D1	CM	MTFC	MTC				
LK3	F405/D1	CM	MTFC	MTC				
LL0,1,2,4,7	E111/E4	MTFC	CM	ORMC	OR			
LLF	E404/A9	JLK	LLC	CM	MTC			
LLF	E404/E9	JLK	LLC	DTM	MTC			
LLJ	E533/F5	CM	MTFC	MTC				
LL0-9	E524/E0	LL	LLC	CM				
LOB	E604/D4	CM	LLC	LL				
LOK	E604/D2	CM	LLC	LL				
LP	F207/H3	JLK	IMGS					
LP	F413/D6	IMGS	JLK					
LP	G118/H5	IR	JLK					
LP	G815/D7	OS	JLK					
LP	G824/A3	OS	JLK					
LR	E409/A6	LL	ALL					
LR	G118/C5	IR	IRMC	CM	MTFC	MTC		
LS	E409/A6	LL	ALL					
LST	F212/F7	CM	OSC	IMGS				
LST	F212/G7	CM	MTFC					
LT	E110/D1	MTC	MTFC					
LT	E110/D3	MTC	MTFC	CM	ORMC	OR		
LT	E409/A6	LL	ALL					
LT	F508/C3	MTC	MTFC	CM	IRMC	IMGS		
LT	G208/E3	MTC	MTFC	CM	IRMC	IR		
LT0-7	G111/D4	IRL	IR					
LT0-7	G128/D4	IRL	IR					
LT1	E110/D1	MTC	MTFC					
LT1	E110/D3	MTC	MTFC	CM	ORMC	OR		
LT2	G133/D3	TN,GN						
LT2	G134/D5	TN,GN						
LU0-9	G110/G3	IRL	IR					
LU0-9	G129/G3	IRL	IR					
LV	E409/A4	PCMB	LL					
LVK	E211/E6	CM	TLC	TL				
LV0-9	E409/C6	LL	ALL					
LV0-9	E211/E8,F8	CM	MTFC					
LW	E807/E2	TRC	PRF					
LW	F407/E2	TRC	PRF					
LW	G807/E2	TRC	PRF					
LXPA	E531/D7	CM	MTFC					
LXP1	E531/C7	CM	MTFC					
LO	E604/D3	CM	LLC	LL				
LO	G106/F2	IRL	IR					
LO	G107/F2	IRL	IR					
LO-8	E504/D4	TL	CM					
LSD	F212/F7	CM	OSC	IMGS				
LSD	F212/G7	CM	MTFC					
M	F407/E0	MISC	TRC	PRF				
M	G807/E2	MISC	TRC	PRF				
M'7	E133/C4	CM	MTFC					
MA	E105/B1	ORMC	PC					
MA	E105/F1	IRMC	PC					
MA	F207/B4	OSC	CM					
MA	F505/B1	ORMC	PC					
MA	F505/F1	IRMC	PC					
MA	G205/B1	ORMC	PC					
MA	G205/E1	IRMC	PC					
MAK	E204/C0	CM	TLC					
MAK	E206/B0	TLC	CM					
MAK1	E204/E0	CM	MTFC	MTC				
MB	E105/C1	ORMC	PC					
MB	E105/F1	IRMC	PC					
MB	E106/C2	MTFC	CM					
MB	E106/C6	CM	PRTD					
MB	E106/D2	JLK	CM					
MB	E106/E6	CM	ORMC					
MB	E209/B9	TL	OGT					
MB	E306/G0	PCMB	NG					
MB	E807/D2	TRC	PRF					
MB	F207/B4	OSC	CM					
MB	F207/G3	JLK	IMGS					
MB	F407/D2	TRC	PRF					
MB	F413/C6	IMGS	JLK					
MB	F505/B1	ORMC	PC					
MB	F505/F1	IRMC	PC					
MB	F506/C2	MTFC	CM	IRMC				
MB	F506/D2	JLK	CM					
MB	G118/G4	IR	JLK					
MB	G132/C4	TL	OGT					
MB	G205/B1	ORMC	PC					
MB	G205/F1	IRMC	PC					
MB	G206/C2	MTFC	CM	IRMC				
MB	G206/D2	JLK	CM					
MB	G504/F0	PCMB	NG					
MB	G807/D2	TRC	PRF					
MB0,1,2,4,7	F213/B6	CM	MTFC					
MB0,1,2,4,7	F213/B7	CM	OSC	IMGS				
MBA/B	F207/G2	MTC	JLK					
MBA/B	F413/C8	JLK	MTC					
MBL	E106/D6	CM	JLK					
MBL	F506/E6	CM	JLK					
MBL	G206/D6	CM	JLK					
MC	E105/B1	ORMC	PC					
MC	E105/F1	IRMC	PC					
MC	E307/D0	NGC	PCMB					
MC	E307/D0	CM	PCMB					
MC	E405/D0	LLC	PCMB					
MC	E405/D0	CM	PCMB					
MC	E405/D5	DTM	PCMB					
MC	F207/B4	OSC	CM					
MC	F505/B1	ORMC	PC					
MC	F505/F1	IRMC	PC					
MC	G205/B1	ORMC	PC					
MC	G205/F1	IRMC	PC					
MC	G505/D0	CM	PCMB					
MC	G505/D0	NGC	PCMB					
MC-	E206/A5	TLC	PC					
MDI	E118/B8	CM	JLK					
MDK	E206/B0	TLC	CM					
MF	E111/C1	MTC	MTFC					
MF	E111/C4	MTC	MTFC	CM	ORMC	OR		
MFK	E408/A5	CM	LLC	PC	ALL			
MIT	E106/E2	MTFC	CM					
MIT	F506/E2	MTFC	CM					
MJ	E106/B9	MISC	ALM					
MJ	E107/C8	PC	ALM					
MJ	E140/E4	ALM	MTRC					
MJ	E306/G2	NG	ALM					
MJ	F506/B9	MISC	ALM					
MJ	G142/F4	ALM	MTRC					
MJ	G206/B9	MISC	ALM					
MJ	G504/G1	NG	ALM					
MJ1	E107/C8	PC	JLK					
MJ1	E140/E5	MTRC	JLK					
MJ1	G142/F5	MTRC	JLK					
MK	E104/C7	ORMC	PC					
MK	E104/F7	IRMC	PC					
MK	E107/A5	ORMC	PC					
MK	F504/C7	PC	ORMC					
MK	F504/G7	PC	IRMC					
MK	F507/A5	IRMC	PC					
MK	G204/C7	PC	ORMC					
MK	G204/G7	PC	IRMC					
MK	G207/B5	IRMC	PC					
MKA	E807/C7	MTFC	CM					
MKA	F407/C7	MTFC	CM					
MKA	G807/C7	MTFC	CM					
MKB	E807/C7	MTFC	CM					
MKB	F407/B7	MTFC	CM					
MKB	G807/C7	MTFC	CM					
MKR	E106/G2	PRF	MTFC					
MKR	F506/G2	PRF	MTFC					
MKR	G206/G2	MTFC	PRF					
MKR-CM	E106/G2	PRF	MTFC					
MKR-CM	F506/G2	PRF	MTFC					
MKR-CM	G206/G2	MTFC	PRF					
MN	E206/A9	PC	ALM					
MN	E307/A0	ALM	PCMB					
MN	E405/A0	ALM	PCMB					
MN	E535/H8	ALM	JLK					
MN	G505/A0	ALM	PCMB					
MO1	E806/D7	CM	MTFC	MTC				
MO1	F405/D7	CM	MTFC	MTC				
MPP	E408/F1	MTC	MTFC	CM	LLC	PC		
MPP0,1,2,4,7	E408/G7	MTC	LL					
MPQ0	E408/F6	MTC	PC					
MP01	E408/F6	MTC	PC					
MRL	E107/C6	ORMC	PC					
MRL	E107/D2	MTC	MTFC	CM	ORMC	OR		
MRL	F507/C6	PC	IRMC					
MRL	F507/D2	MTC	MTFC	CM	IRMC	IMGS		
MRL	G139/B5	IR	IRMC	CM	MTFC			
MRL	G207/C6	IRMC	PC					
MRL	G207/D2	MTC	MTFC	CM	IRMC	IR		
MS1,2	E104/C7,D7	ORMC	PC					
MS1,2	E104/F7,H7	IRMC	PC					
MS1,2	E140/B2,C2	ORMC	PC					
MS1,2	E140/B2,C2	IRMC	PC					
MS1,2	F504/C7,D7	PC	ORMC					
MS1,2	F504/G7	PC	IRMC					
MS1,2	G142/B2,C2	PC	ORMC					
MS1,2	G142/B2,C2	PC	IRMC					
MS1,2	G204/C7,D7	PC	ORMC					
MS1,2	G204/G7	PC	IRMC					
MT	E106/A2	MTFC	CM					
MT_K	E507/E2	MTC	MTFC	CM				
MTR	E806/A8	CM	AMRST					
MTR	G805/A8	CM	AMRST					
MT3	E204/E2	CM	MTC					
MT5	E208/F8	CM	MTFC	MTC				
MT7	E522/D2	MTC	MTFC	CM				
MT8	E507/H3	MTC	CM					
MT9	E206/H7	CM	MTC					
MXT	E109/D5	CM	MTFC					
MXT	G119/D5	CM	MTFC					
M01	G805/D7	CM	MTFC	MTC				
M1T	G206/E2	MTFC	CM					
M7	E115/G2	MTC	MTFC	CM	ORMC	OR		
M7	E133/G5	CM	OSC	OS				
M7	E143/A9	CM	MTRC	MTC	AMRST			
M7	G212/H2	MTC	MTFC	CM	IRMC	IR		
M7	G213/F3	CM	MTFC					
M7	G213/F4	CM	OSC	OS				
M7	G220/G9	MTC	AMRST					
M7	G810/A8	CM	OSC	OS				
M7	G820/A8	CM	OSC	OS				
M9	F506/C6	CM	PRTD					
M9	G206/C6	CM	PRTD					
N	G120/H4	AMRST	MTC					
NE	E133/H5	CM	MTFC					
NE	F514/D0	MTFC	CM					
NG	E306/C1	MTFC	NGC					
NG	G504/C0	MTFC	NGC					
NGCT0-3	E306/D1	MTFC	NGC					
NGCT0-3	G504/D1	NGC	MTFC					
NGCU0-9	E306/C1	MTFC	NGC					
NGCU0-9	G504/C1	NGC	MTFC					
NGC0-9	E306/C1	MTFC	NGC					
NGC0-9	G504/D1	NGC	MTFC					
NGF	E306/E1	JLK	NGC	CM	MTC			
NGF	G504/E0	JLK	NGC	CM	MTC			
NGK	E309/E8	CM	NGC					
NGK	E309/F3	MTFC	CM					
NGK	G508/F3	MTFC	CM	NGC				
NGK1	E309/G3	MTFC	CM					
NG1	E306/C1	MTFC	NGC					

ISSUE	DWG SIZE	LEAD INDEX
5	C2	

A604 SFD-10-01 BELL LABORATORIES

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DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
NG1	G504/D0	MTFC	NGC					
NOB	E111/D4	MTFC	CM	ORMC	OR			
NOB	F213/F7	CM	OSC	IMGS				
NOBT	E111/C4	MTC	MTFC	CM				
NOC	E212/E0	MTFC	CM					
NR	E316/G2	MTFC	CM					
NR	G511/G2	CM	MTFC					
NSI	E126/D3	MTFC	CM					
NT	E533/B0	NTC	LL	LLC	CM			
NT	E536/D7	NTC	LL	LLC	CM			
NTH	E532/D6	MTC	MTFC					
NOB'	F213/F6	CM	MTFC					
CA	G208/B3	MTC	MTFC	CM	IRMC	IR		
OA/OB	E306/D1	MTFC	NGC					
OB	G208/C3	MTC	MTFC	CM	IRMC	IR		
OBS	E111/D4	MTFC	CM	ORMC	OR			
OBS	F213/E7	CM	OSC	IMGS				
OBST	E111/D4	MTC	MTFC	CM				
OCN	F507/E2	CM	IRMC					
OCN	G207/E2	MTC	MTFC	CM	IRMC			
OD	F214/E4	CM	MTFC					
OD	F214/F5	CM	OSC	IMGS				
OD'	F214/F4	CM	MTFC					
OF-	E117/G3	CM	T-REG					
OFK	E312/F7	NG	NGC	CM				
OH	G104/F1	AMRST	IRL	IR				
OHB	E308/D6	CM	NGC	NG				
OHB	G506/D5	CM	NGC	NG				
OK	G814/F8	MTC	AMRST					
ON	E807/C2	TRC	PRF					
ON	E807/H5	TRC	MTFC					
ON	F407/C2	TRC	PRF					
ON	F407/G5	TRC	MTFC					
ON	G807/C2	TRC	PRF					
ON	G807/G5	TRC	MTFC					
ONN	F214/A1	TL	TLC	CM	MTFC			
ON1	F206/F7	CM	OSC	IMGS				
ON1	F411/B2	CM	OSC	IMGS				
OPG	G134/G8	IR	AMRST					
OPR	E128/H7	CM	MTFC					
OR	E110/B3	MTC	MTFC	CM	ORMC	OR		
ORC'0	F214/H4	CM	MTFC					
ORC0	F214/H5	CM	OSC	IMGS				
ORK	F211/F8	CM	MTFC					
OR2	E110/B1	MTC	MTFC					
OSE	F206/C6	MTFC	CM					
OSG-	E126/F0	MTFC	CM					
OSG-11	F204/B3	MTC	MTFC	CM				
OSGA0-11	F205/A6	CM	OSC					
OSGB0-11	F205/G6	CM	OSC					
OSK	F204/G4	MTC	MTFC	CM				
OSTZ	F215/D9	CM	MTFC					
OS0-4	F206/B2	CM	MTFC	MTC				
OS0-4	F206/B8	CM	OSC	IMGS				
OTS0,1	E209/F2	MTC	CM					
PA	E505/C0	CM	MTFC					
PB	E505/D0	CM	MTFC					
PBN	E312/G7	NG	NGC	CM				
PC	E505/E0	CM	MTFC					
PC-	E117/F3	CM	T-REG					
PD	E112/B2	MTC	MTFC	CM	ORMC	OR		
PE	E505/F0	CM	MTFC					
PK	E112/A2	MTC	MTFC	CM	ORMC	OR		
PKU	E711/C5	RSW	IAO					
PL	G814/A8	AMRST	OS					
PLL	E408/F0	MTC	MTFC	CM				
PMO	E312/G7	NG	NGC	CM				
PN	E309/A3	MTFC	CM					
PN	E309/A8	CM	NGC	NG				
PN	G508/A3	MTFC	CM	NGC	NG			
PNR	E505/A0	CM	MTFC					
PN1	E309/A8	CM	NGC	NG				
PN1	G508/A8	CM	NGC	NG				
PR	E510/G7	TLC	CM	MTFC				
PRCY	E317/H4	MTFC	CM					
PS	E112/B2	MTC	MTFC	CM	ORMC	OR		
PTK	E309/A3	CM	MTFC					

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
PTK	G508/A3	CM	MTFC					
PTN	E309/B8	CM	NGC	NG				
PTN	E309/C3	MTFC	CM					
PTN	G508/C3	MTFC	CM	NGC	NG			
PTN1	E309/B8	CM	NGC	NG				
PTN1	G508/B8	CM	NGC	NG				
PU	E711/C3	PRTD	IAO					
PUL	E317/C9	CM	MTFC					
PUL	G512/D8	CM	MTFC					
P0-9	E504/D1	CM	MTFC					
R	E520/A1	TL	TLC	CM				
R	E535/C2	MTC	LL	TL	TRK			
R	E539/D7	NTC	LL					
R	E710/B2	MDF	LL	TL	IAO			
R	E711/C5	RSW	IAO					
R	F208/B4	OSL	IMGS					
R	F208/D2	OSL	IMGT					
R	F209/B4	OSL	IMGS					
R	F209/D2	OSL	IMGT					
R	F414/B3	IMGT	OSL	IMGS				
R	F415/B3	IMGT	OSL	IMGS				
R	F416/B2	MDF	LL	TL	F417/B0	IMGT		
R	F416/D5	IMGS	OSL	IMGT				
R	F417/B0	F416/A8	IMGT	TL	LL	MDF		
R	G114/C1	MDF	LL	TL	OGT	MDF		
R	G1140F0	AMRST	OS	OSL	OGT			
R	G115/C0	MDF	ITT	LL	TL	OGT	MDF	
R	G115/D1	ITT	IRL	IR	MFSL			
R	G115/G2	IR	AMRST	MFSR				
R	G132/B0	MDF	LL	TL	OGT	MDF		
R	G132/G0	AMRST	OS	OSL	OGT			
R	G133/BC	ITT	LL	TL	OGT	MDF		
R	G133/D2	ITT	IRL	IR	AMRST			
R	G134/D8	IR	AMRST					
R	G135/C0	MDF	ITT	LL	TL	OGT	MDF	
R	G135/E1	ITT	IRL					
R	G816/B1	MDF	ITT	LL	TL	OGT	MDF	
R	G816/F0	MFSR	AMRST	OS	OSL	OGT		
R	G817/C0	MDF	IT	TL	LL	MDF		
R	G817/D3	IT	IRL	IR	MFSR			
R	G826/B0	MDF	ITT	LL	TL	OGT	MDF	
R	G826/D2	ITT	IRL					
R	G826/R1	AMRST	OS	OSL	OGT			
R	G827/D2	IT	IRL	IR				
R	G827/R1	MDF	IT	TL	LL	MDF		
RA	E104/B1	PC	ORMC					
RA	E104/F1	PC	IRMC					
RA	E517/B1	MTC	MTFC	CM				
RA	E711/C5	RSW	IAO					
RA	E806/A8	CM	AMRST					
RA	F504/B1	PC	ORMC					
RA	F504/F1	PC	IRMC					
RA	G204/B1	PC	ORMC					
RA	G204/F1	PC	IRMC					
RA	G805/A8	CM	AMRST					
RB	E104/B1	PC	ORMC					
RB	E104/F1	PC	IRMC					
RB	E711/C4	RSW	IAO					
RB	F504/B1	PC	ORMC					
RB	F504/F1	PC	IRMC					
RB	G204/B1	PC	ORMC					
RB	G204/F1	PC	IRMC					
RBT	E517/D1	MTC	MTFC	CM	AMRST			
RBT1	E517/E1	MTC	MTFC	CM				
RB0-3	G106/F2,G2	IRL	IR					
RB0-3	G107/F2-G3	IRL	IR					
RB0-9	G120/C1	IRL	AMRST					
RC	E537/B5	CM	TLC	TL	IAO	RSW		
RC	E711/D7	IAO	TL	TLC	CM			
RCK2	E537/E0	CM	MTFC					
RCK3	E537/F0	CM	MTFC					
RCT	E313/A3	CM	MTC					
RCT/T-	E313/B3	MTC	MTFC					
RCT/U-	E313/B3	MTC	MTFC					
RCT1-15	E313/C3	MTC	MTFC	CM				
RCY	E517/A1	MTC	MTFC	CM				
RC01-15	G509/E7	NG	NGC	CM				

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
RC1-15	E312/D7	NG	NGC	CM				
REG	G112/D4	IRL	IR					
REG	G130/E4	IRL	IR					
REG1	G112/E4	IRL	IR					
RF	E520/F1	TL	TLC	CM	MTFC			
RG	F506/G6	PC	IRMC	MTFC				
RG	G206/H6	PC	IRMC	MTFC				
RG-	E106/H5	MTFC	ORMC	PC				
RG-	E106/H9	MTFC	OR	AMRST				
RGG	E106/H5	MTFC	ORMC					
RGG	F506/G7	IRMC	MTFC					
RGG	G206/H7	IRMC	MTFC					
RG0-23	G206/G6	MTFC	IR	AMRST				
RI	E317/D0	MTFC	CM					
RI	G512/D0	CM	MTFC					
RING G	E535/E8	CM	DTM					
RK	E520/D1	TL	TLC	CM	MTFC			
RK2,3	E114/G3	MTFC	CM					
RL	E107/E2	MTFC	CM	ORMC	OR			
RL	G135/E1	ITT	IRL					
RLP	E106/E7	ORMC	JLK					
RLP	F506/E7	IRMC	JLK					
RLP	G206/E7	IRMC	JLK					
RLT	E107/F2	MTC	CM	AMRST				
RN0,1,2,4,7	F214/B8	CM	MTFC	MTC				
RN0,1,2,4,7	F214/C8	CM	OSC	IMGS				
RN10-24	F214/F1	TL	TLC	CM				
RNG	E316/B2	MTFC	CM					
RNG	G511/B2	CM	MTFC					
RNK	F215/D3	CM	MTFC					
RNT'0-2	F214/F4-H4	CM	MTFC					
RNT0,1	F214/E4,F4	CM	MTFC					
RNT2	F215/F7	MTFC	CM					
RNT20	F214/H4	CM	MTFC					
ROA	E118/F2	MTFC	CM					
ROA	E132/D8	CM	MTFC					
ROG	G814/H4	MTC	MTFC	CM				
ROS	E807/D5	TRC	MTFC					
ROS	F407/D5	TRC	MTFC					
ROS	G807/D5	TRC	MTFC					
ROT	G814/G4	MTC	MTFC	CM				
RP	E113/C2	MTC	MTFC	CM	ORMC	OR		
RP	F212/H8	CM	OSC	IMGS				
RPAB	G118/E5	IRL	IRMC	PC	MTFC			
RPAB	G206/H5	MTFC	PC	IRMC	IRL			
RPB	G118/D5	IRL	IRMC	PC	MTFC			
RPB	G206/G5	MTFC	PC	IRMC	IRL			
RPK	F212/G7	CM	MTFC					
RPSA	G118/E5	IRL	IRMC	PC	MTFC			
RPSA	G206/H5	MTFC	PC	IRMC	IRL			
RP0-3	G118/E5,F5	IRL	IRMC	PC	MTFC			
RP0-3	G206/H5	MTFC	PC	IRMC	IRL			
RP0-9	G120/A1	IRL	AMRST					
RSC	F215/B0	MTFC	CM					
RSK	E536/G2	MTC	MTFC	CM	TLC	TL	RSW	
RS0-9	E536/A2	MTC	MTFC	CM				
RS0-9	E536/A8-D8	CM	TLC	TL	RSW			
RS1,2	F504/C3	ORMC						
RS1,2	F504/F3,G3	IRMC						
RT	E711/C3	RSW	IAO					
RTOS	E807/G5	TRC	MTFC					
RTOS	F407/G5	TRC	MTFC					
RTOS	G807/G5	TRC	MTFC					
RO	F413/B5	IMGS	OSC	CM				
RO	F508/B4	MTFC	CM	IRMC	IMGS			
RO	G208/E4	MTFC	CM	IRMC	IR			
RO	G814/G8	CM	CSC	OS				
RO'	E525/H2	MTFC	CM					
RO'	F413/A7	CM	MTFC					
RO'	G814/G5	MTFC	CM					
ROA	F511/D8	CM	D306/H8					
R1,2	G115/F3	MFSR	IR					
R1,2	G817/F5	MFSR	IR					
R1NG G	E530/E9	CM	PRTD					
R1NG G	E530/F9	CM	JLK					
R2	G114/D8	MDF	JLK					
R2	G115/D8	MDF	JLK					

LEAD INDEX

DWG SIZE C2

ISSUE 5

BELL LABORATORIES

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A605

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DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
R2	G132/C7	MDF	OGT JK					
R2	G133/C8	MDF	JLK					
R2	G135/D8	MDF	JKL					
R2	G816/D9	MDF	JLK					
R2	G826/D9	MDF	JLK					
S	E359/D7	NTC	LL					
S	E524/B4	LL	JGF	TL	IAO			
S	E528/A3	JGF	TL	IAO				
S	E529/C2	LL	JGF	TL	IAO			
S	E532/A2	TT	MTC					
S	E533/A0	MTC	NTC	LL	TL	IAO		
S	E710/C4	LL	TL	IAO				
S	F207/B1	OSC	CM					
S	F416/B3	LL	TL	IMGT				
S	F417/B2	IMGT	TL	LL				
S	G114/C3	LL	TL	OGT				
S	G115/D4	IT	LL	TL	OGT			
S	G132/B2	LL	TL	OGT				
S	G133/C4	ITT	LL	TL	OGT			
S	G135/C4	ITT	LL	TL	OGT			
S	G816/C4	ITT	LL	TL	OGT			
S	G817/D5	IT	TL	LL				
S	G826/C4	ITT	LL	TL	OGT			
S	G827/D5	IT	TL	LL				
S0-4	F207/B0	OSC	CM					
SA	E140/H5	MTRC	AMB					
SA	G142/H5	MTRC	AMB					
SAM	F207/B3	OSC	CM					
SB	E140/H5	MTRC	AMB					
SB	E517/B1	MTC	MTFC	CM				
SB	G142/H5	MTFC	AMB					
SBA1,2	E528/C1	TL	TLC	CM				
SBM	F207/B3	OSC	CM					
SBT	E517/B1	MTC	MTFC	CM				
SC	F206/E8	OSL	IMGT					
SC	F208/D1	OSL	IMGT					
SC	F209/D1	OSL	IMGT					
SC	F213/F7	CM	OSC	IMGS				
SC	F213/G6	CM	MTFC					
SC	F411/F8	OSL	IMGT					
SCB	E605/B1	CM	MTFC					
SCBA0-3	F204/B9	CM	JLK					
SCBB0-3	F204/C9	CM	JLK					
SCK	E112/C2	MTC	MTFC	CM	ORMC	OR		
SCM	F207/B2	OSC	CM					
SCN	E112/D2	MTC	MTFC	CM	ORMC	OR		
SCN	E807/F2	PRF	TRC					
SCN	F407/E2	TRC	PRF	TRC				
SCN	G807/E2	TRC	PRF	TRC				
SDT	E134/C2	MTFC	CM					
SEF	E520/G1	TL	TLC	CM	MTFC			
SF	E510/G7	TLC	CM	MTFC				
SIA	F204/D3	MTC	MTFC	CM				
SIB	F204/E4	MTC	MTFC	CM				
SIE	F204/D8	CM	IMGS					
SIO	F204/D8	CM	IMGS					
SKA	F205/D6	CM						
SKB	F205/F6	CM						
SL	E533/F5	CM	MTFC	MTC				
SLCK	E316/F9	CM	MTFC					
SLCK	G511/F9	CM	MTFC					
SLK	F206/E7	CM	TLC	OSL				
SLK	F208/D0	OSL	TLC	CM				
SLK	F209/D0	OSL	TLC	CM				
SLK	F411/F6	CM	TLC	OSL				
SLK1,2	F207/F8	CM	MTFC					
SM	G106/F1	IRL	IR					
SM	G107/F1	IRL	IR					
SM0-9	E526/F5	CM	LLC	LL	ALL			
SNG	E306/A1	MTFC	CM					
SNG	G504/A1	MTFC	CM					
SNK	E207/G5	MTFC	CM					
SOG	E108/B1	MTFC	CM					
SOG	G210/B1	MTFC	CM					
SON	F204/C4	CM						
SPC	E532/E6	MTC	MTFC					
SPE	G814/B8	AMRST	OS					

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
SPL	G208/A3	MTC	MTFC	CM	IRMC	IR		
SQA	E507/H3	MTFC	CM					
SRK	E537/D0	CM	MTFC					
SS0-9	F208/D0	OSL	TLC	CM				
SS0-9	F209/D0	OSL	TLC	CM				
SSA	F204/F4	MTC	MTFC	CM				
SSB	F204/G4	MTC	MTFC	CM				
SS0-9	F206/E7	CM	TLC	OSL				
ST	E104/C1	OR	ORMC					
ST	E104/G1	IR	IRMC					
ST	E140/E0	OR	ORMC					
ST	E140/E0	IR	IRMC					
ST	E206/A6	DTM	PC					
ST	E206/A6	CM	PC					
ST	E807/B2	TRC	PRF					
ST	F407/B2	TRC	PRF					
ST	F504/C1	OR	ORMC					
ST	F504/G1	IMGS	IRMC					
ST	G104/D2	IRL	ITT					
ST	G104/G1	AMRST	IRL	ITT				
ST	G135/E2	ITT	IRL					
ST	G139/D5	IR	IRMC					
ST	G142/B0	OR	ORMC					
ST	G142/B0	IR	IRMC					
ST	G204/C1	OR	ORMC					
ST	G204/G1	IR	IRMC					
ST	G807/B2	TRC	PRF					
ST-	E307/G2	CM	PCMB					
ST-	E405/H1	CM	PCMB					
ST-	E405/H5	DTM	PCMB	LLMC				
ST-	F205/C7	CM						
ST-	G505/G2	PCMB	CM					
STA,B	E104/C6,D6	ORMC	PC					
STA,B	E104/F6,H6	IRMC	PC					
STA,B	E140/B1,C1	ORMC	PC					
STA,B	E140/B1,C1	IRMC	PC					
STA,B	F205/C6,E6	CM						
STA,B	F504/D3	ORMC	PC	ORMC				
STA,B	F504/G3,H3	IRMC	PC	IRMC				
STA,B	G142/B1,C1	ORMC	PC	ORMC				
STA,B	G142/B1,C1	IRMC	PC	IRMC				
STA,B	G204/C6,D6	ORMC	PC	ORMC				
STA,B	G204/F6,H6	IRMC	PC	IRMC				
STG	G120/H6	ARMST	MTC					
STH	E807/B2	TRC	PRF					
STH	F407/B2	TRC	PRF					
STH	G807/B2	TRC	PRF					
STP1	E525/H2	MTC	MTFC	CM				
STP2	E525/F2	MTC	MTFC	CM				
STR	E807/A2	TRC	MTFC					
STR	F407/A2	TRC	MTFC					
STR	G807/A2	TRC	MTFC					
STT	G120/H6	ARMST	MTC					
STW	E807/B2	TRC	PRF					
STW	F407/B2	TRC	PRF					
STW	G807/B2	TRC	PRF					
STO	E206/E5	CM	PC					
STO	E307/G1	CM	PCMB					
STO	E405/H0	CM	PCMB					
STO	E405/H5	DTM	PCMB	LLMC				
STO	G505/G1	PCMB	CM					
SUP	G112/E4	IRL	IR					
SUP	G130/E4	IRL	IR					
SUP1	G112/F4	IRL	IR					
SZA	E507/A7	TLC	CM					
SZB	E507/B7	TLC	CM					
SZC	E507/B7	TLC	CM					
S0-2	E128/A7,B7	CM	T-REG					
S0-8	E807/F5	TRC	MTFC					
S0-8	F407/F5	TRC	MTFC					
S0-8	G807/F5,G5	TRC	MTFC					
S1	E211/D6	CM	TLC	TL	IAO			
S1	E528/B9	IAO	TL	TLC	CM			
S1	E529/B9	IAO	TL	TLC	CM			
T	E535/C2	MTC	LL	TL	TRK			
T	E539/D7	MTC	LL					
T	E710/A2	MDF	LL	TL	IAO			

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
T	E711/C4	RSW	IAO					
T	F208/B4	OSL	IMGS					
T	F208/D2	OSL	IMGT					
T	F209/B4	OSL	IMGS					
T	F209/D2	OSL	IMGT					
T	F414/A3	IMGT	OSL	IMGS				
T	F415/A3	IMGT	OSL	IMGS				
T	F416/A2	MDF	LL	TL	F417/A0	IMGT		
T	F416/C5	IMGS	OSL	IMGT				
T	F417/A0	F416/A8	IMGT	TL	LL	MDF		
T	G114/B1	MDF	LL	TL	OGT	MDF		
T	G114/F0	AMRST	OS	OSL	OGT			
T	G115/B0	MDF	ITT	LL	TL	OGT	MDF	
T	G115/D2	ITT	IRL	IR	MFSL			
T	G115/G2	IR	AMRST	MFSR				
T	G132/A0	MDF	LL	TL	OGT	MDF		
T	G132/E0	AMRST	OS	OSL	OGT			
T	G133/A0	ITT	LL	TL	OGT	MDF		
T	G133/D2	ITT	IRL	IR	AMRST			
T	G134/E8	IR	AMRST					
T	G135/A0	MDF	ITT	LL	TL	OGT	MDF	
T	G135/E1	ITT	IRL					
T	G813/B7	OS	JLK					
T	G816/A1	MDF	ITT	LL	TL	OGT	MDF	
T	G816/E0	MFSR	AMRST	OS	OSL	OGT		
T	G817/A0	MDF	IT	TL	LL	MDF		
T	G817/D3	IT	IRL	IR	MFSR			
T	G826/A0	MDF	ITT	LL	TL	OGT	MDF	
T	G826/D2	ITT	IRL					
T	G826/E1	AMRST	OS	OSL	OGT			
T	G827/A1	MDF	IT	TL	LL	MDF		
T	G827/D3	IT	IRL	IR				
TA	E106/C9	MISC	CM					
TA	E140/H6	AMB	MTRC					
TA	F506/C9	MISC	CM					
TA	G142/H6	AMB	MTRC					
TA	G206/C9	MISC	CM					
TAN	G208/G3	MTC	MTFC	CM	IRMC	IR		
TAN1-4	G208/G7,H7	IRMC	IR					
TB	E140/H6	AMB	MTRC					
TB	E517/C1	MTC	MTFC	CM				
TB	G142/H6	AMB	MTRC					
TB0-9	E209/F6	CM	TLC	TL				
TBH	E317/D9	CM	MTFC					
TBH	G512/E8	CM	MTFC					
TBI	E317/E0	MTFC	CM					
TBI	G512/F0	CM	MTFC					
TBK	E209/G6	CM	MTFC					
TBK	E209/G6	CM	TLC	TL				
TBS0-3	E308/F3	MTC	MTFC	CM	NGC	NG		
TBT	E517/C1	MTC	MTFC	CM				
TB0-9	E208/A9	CM	MTFC					
TB0-9	E308/F6	CM	NGC	NG				
TB0-9	G506/G5	CM	NGC	NG				
TC	E108/G6	ORMC	PC					
TC	E140/D1	IRMC	PC					
TC	E140/D1	ORMC	PC					
TC	F510/G6	IRMC	PC					
TC	G142/D1	PC	ORMC					
TC	G142/D1	PC	IRMC					
TC	G210/G6	IRMC	PC					
TCA,B	E108/A8	MTRC	PC					
TCA,B	E140/A3,C3	PC	MTRC	JLK				
TCA,B	G142/A3,C3	PC	MTRC	JLK				
TCA,B	G210/A8	MTRC	PC					
TCA,B	F510/A8	MTRC	PC					
TCHK	E525/H2	MTC	MTFC	CM				
TCH0-9	E522/C2	MTC	MTFC	CM				
TCK1	E537/E0	CM	MTFC					
TC1	E108/H6	ORMC	PC	MTFC				
TC1	E140/E1	IRMC	PC					
TC1	E140/E1	ORMC	PC					
TC1	F510/H6	IRMC	PC					
TC1	G142/E1	PC	ORMC					
TC1	G142/E1	PC	IRMC					
TC1	G210/H6	IRMC	PC	MTFC				
TDCT	E712/D3	CM	MTFC	MTC				

ISSUE	DWG SIZE	LEAD INDEX
5	C2	
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DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
TDCT	F404/D3	CM	MTFC	MTC				
TDCT	G804/E2	CM	MTFC	MTC				
TER	E108/E1	MTFC	CM					
TER	F510/E1	MTFC	CM					
TER	G210/E1	MTFC	CM					
TF	E209/F9	TL	IAO					
TF	G106/F2	IRL	IR					
TF	G107/F2	IRL	IR					
TF-	E206/F6	CM	MTFC	MTC				
TF0,1,2,4,7	F417/E6,F6	IMGS	IRMC	CM				
TF0,1,2,4,7	F512/C5-E5	IMGS	IRMC	CM	MTFC	MTC		
TF0,1,2,4,7	F513/C5	IMGS	IRMC	CM	MTFC	MTC		
TF0-2	G211/D1-F1	IR	IRMC	CM	MTFC	MTC		
TF0-9	G109/G4	IRL	IR					
TF0-9	G127/G5	IRL	IR					
TG	F208/B8	CM	OSC	IMGS				
TG	F209/B8	CM	OSC	IMGS				
TG	F411/D2	CM	OSC	IMGS				
TG-	E209/E6	CM	TLC	TL				
TGT	E306/D6	CM	MTFC					
TGT	F405/D6	CM						
TGT	G805/D6	CM	MTFC					
TG0-9	E208/A9	CM	MTFC					
TG10-19	E208/A9	CM	MTFC					
TK	E525/G2	MTFC	CM					
TLA	E140/C6	JLK	MTRC					
TLA	G142/C6	JLK	MTFC					
TLB	E140/F6	JLK	MTRC					
TLB	G142/G6	JLK	MTFC					
TLH	E533/F7	CM	MTFC	MTC				
TM	E106/B0	MTC	MTFC	CM				
TM	E106/F6	CM	ORMC					
TM	E108/E7	OR	PC					
TM	E140/F0	IR	PC					
TM	E140/F0	OR	PC					
TM	F208/A4	OSL	IMGS					
TM	F208/D2	OSL	IMGT					
TM	F209/A4	OSL	IMGS					
TM	F209/D2	OSL	IMGT					
TM	F506/B0	MTC	MTFC	CM				
TM	F506/F6	CM	IRMC					
TM	F510/E7	IMGS	PC					
TM	G115/E7	OGT	OSL	OS	OSC	CM		
TM	G135/D7	OGT	OSL	OS	OSC	CM		
TM	G138/B3	IR	IRL					
TM	G139/C5	IR	PC					
TM	G142/F0	PC	OR					
TM	G142/F0	PC	IR					
TM	G206/B0	MTC	MTFC	CM				
TM	G206/F6	CM	IRMC					
TM	G210/E7	IR	PC					
TM	G816/D8	OGT	OSL	OS	OSC	CM		
TM	G826/D8	OGT	OSL	OS	OSC	CM		
TMB	E307/G2	CM	PCMB					
TMB	E405/H1	CM	PCMB					
TMB	G505/G1	PCMB	CM					
TN	E309/A8	CM	NGC	NG				
TN	E309/B3	MTFC	CM					
TN	G133/D7	OGT	OSL	OS	OSC	CM		
TN	G508/B3	MTFC	CM	NGC	NG			
TNK	G509/E7	NG	NGC	CM				
TN1	E309/B8	CM	NGC	NG				
TN1	G508/B8	CM	NGC	NG				
TOG	E108/E1	MTFC	CM					
TOG	G210/C1	MTFC	CM					
TOS0-4	F206/B6,C6	MTC	MTFC	CM				
TP	E113/C2	MTC	MTFC	CM	ORMC	OR		
TP	F212/H8	CM	OSC	IMGS				
TR	G815/F3	MFCS	OS					
TRB	E807/D7	MTFC	CM					
TRB	F407/D7	MTFC	CM					
TRB	G807/D7	MTFC	CM					
TRB1	E807/D7	MTFC	JLK					
TRB1	F407/D7	MTFC	JLK					
TRB1	G807/D7	MTFC	JLK					
TRC	E106/H7	ORMC	PC					
TRC	E807/A2	TRC	MTFC					

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
TRC	E807/C2	TRC	PRF					
TRC	F407/A2	TRC	MTFC					
TRC	F407/C2	TRC	PRF					
TRC	F506/G6	PC	IRMC					
TRC	G206/H6	MTFC	IRMC					
TRC	G807/A2	TRC	MTFC					
TRC	G807/C2	TRC	PRF					
TRK	E108/E1	MTC	MTFC	CM	ORMC	PC		
TRK	F510/E0	MTC	MTFC	CM	IRMC	PC		
TRK	G210/E1	MTC	MTFC	CM	IRMC	PC		
TRL	E107/B2	MTC	MTFC	CM	ORMC	PC		
TRL	F507/B2	MTC	MTFC	CM	IRMC	PC		
TRL	F507/B5	IRMC	PC					
TRL	G207/B2	MTC	MTFC	CM	IRMC	PC		
TRR	E806/D5	CM	MTFC	MTC				
TRR	F405/D5	CM	MTFC	MTC				
TRR	G805/D5	CM	MTFC	MTC				
TRS	E108/F1	MTC	MTFC	CM	ORMC	PC		
TRS	F510/F0	MTC	MTFC	CM	IRMC	PC		
TRS	G210/F1	MTC	MTFC	CM	IRMC	PC		
TRST	E807/B7	MTFC	CM					
TRST	F407/B7	MTFC	CM					
TRST	G807/A7	MTFC	CM					
TRT	E106/C8	MISC	CM					
TRT	E535/E4	MTC	MTFC	CM				
TRT	F506/C9	MISC	CM					
TRT	G206/C9	MISC	CM					
TR1	E806/D4	CM	MTFC	MTC				
TR1	F405/D4	CM	MTFC	MTC				
TR1	G805/D4	CM	MTFC	MTC				
TR2	E108/F1	MTC	MTFC	CM	ORMC	PC		
TR2	F510/F0	MTC	MTFC	CM	IRMC	PC		
TR2	G210/F1	MTC	MTFC	CM	IRMC	PC		
TSE	E208/B9	CM	MTFC					
TSE1,2	E208/G8	CM	MTFC	MTC				
TSK	E209/B5	MTC	MTFC	TLC	TL			
TSR	F215/E2	OSC	CM	MTFC				
TSR1	F215/E2	OSC	CM					
TST	E209/B5	MTC	MTFC	TLC	TL			
TST	G118/D5	IR	IRMC	CM				
TSX	E211/G6	CM	TLC	TL				
TSX	E527/H6	CM	TLC	TL				
TS0-19	E208/B9-E9	CM	MTFC					
TTF	E510/G7	TLC	CM	MTFC				
TTT	E535/C4	MTC	MTFC	CM				
TT0-19	E209/D1	MTC	CM					
TT0,1,2,4,7	G215/A3-D3	IR	IRMC	CM	MTFC	MTC		
TT0,1,2,4,7	G217/A3-C3	IR	IRMC	CM	MTFC	MTC		
TVT	F213/G6	CM	MTFC					
TVT	F213/G7	CM	OSC	IMGS				
T0,1	E315/D2	MTFC	CM					
T0-9	E308/D6-G6	CM	MTFC					
T0-9	G506/E5-H5	CM	MTFC					
T1,2	G115/E3,F3	MFSR	IR					
T1,2	G817/E5	MFSR	IR					
T2	G114/D8	MDF	JLK					
T2	G115/D8	MDF	JLK					
T2	G132/C7	MDF	OGT JK					
T2	G133/C8	MDF	JLK					
T2	G135/D8	MDF	JKL					
T2	G816/D9	MDF	JLK					
T2	G826/C9	MDF	JLK					
UK	E309/E8	CM	NGC	NG				
UK	E309/F3	MTFC	CM					
UK	G508/F3	MTFC	CM	NGC	NG			
UT0,1,2,4,7	G218/A3-D3	IR	IRMC	CM	MTFC	MTC		
U0-9	E311/D7	CM	NGC	NG				
U0-9	E311/F7	CM	MTFC					
U0-9	G507/B7-F7	CM	MTFC					
U0-9	G507/D7	CM	NGC	NG				
VF0,1,2,4,7	E114/D2	MTC	MTFC	CM	ORMC	OR		
VF0,1,2,4,7	E114/D2	MTC	MTFC	CM	OSC	OS		
VF'0,1,2,4,7	E114/D3	MTFC	CM					
VFT0-4	E314/G9	MTC	E315/F0	MTFC	CM			
VFT0-4	E603/G0	MTFC	CM					
VFT0-4	G510/F0	MTFC	CM					
VF0-4	E312/E7	NG	NGC	CM				

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION					
VF0-4	G509/E7	NG	NGC	CM				
VG0,1,2,4,7	E114/F2	MTC	MTFC	CM	ORMC	OR		
VG0,1,2,4,7	E114/F2	MTC	MTFC	CM	OSC	OS		
VG'0,1,2,4,7	E114/F3	MTFC	CM					
VGB00-11	E407/C3	LL	LLC	CM				
VGB00-11	E409/F1	CM	LLC	LL				
VGB00-11	E410/G5	CM	LLC	LL				
VGB00-11	E411/H6	CM	LLC	LL				
VGT0,1,2,4,7	E315/D2	MTFC	CM					
VGT0,1,2,4,7	G510/D2	CM	MTFC					
VGU0,1,2,4,7	E315/D2	MTFC	CM					
VGU0,1,2,4,7	G510/D2	CM	MTFC					
VGT0-11	E603/D0	MTFC	CM					
VGT0-11	G510/D0-E0	MTFC	CM					
VGT0-11	E314/D9	MTC	E315/D0	MTFC	CM			
VG00-11	E312/D7	NG	NGC	CM				
VG00-11	G509/D7	NG	NGC	CM				
VTK1	E315/G6	CM	MTFC					
VTK1	E603/H6	CM	MTFC					
V0-4	E410/B5	CM	LLC	LL				
V0-4	E411/B6	CM	LLC	LL				
W	E309/F8	CM	NGC					
W	G508/F8	CM	NGC					
WA	G815/G5	OSGR	OS					
WA	G824/G7	OSGR	OS					
WF	E312/E3	CM	NGC	NG				
WF	G509/E3	CM	NGC	NG				
WG	E312/C3	CM	NGC	NG				
WG	G509/C3	CM	NGC	NG				
WL	E312/B3	CM	NGC	NG				
WL	G509/B3	CM	NGC	NG				
WT	E135/E3	MTFC	CM					
XAB	E525/G2	MTFC	CM					
XAN	E107/C2	MTFC	CM					
XAN	E109/E7	CM	MTFC					
XAN	F507/C2	CM						
XAN	G119/E7	CM	MTFC					
XAN	G207/D2	MTFC	CM					
XBT	E107/C2	MTFC	CM					
XBT	E109/B7	CM	MTFC					
XBT	E111/F4	MTFC	CM					
XBT	F507/C2	CM						
XBT	G119/B7	CM	MTFC					
XBT	G207/C2	MTFC	CM					
XCH	E109/D5	CM	MTFC					
XCH	E524/H9	CM	MTFC					
XCH	G119/D5	CM	MTFC					
XCKR	E108/F1	MTFC	CM					
XCKR	E109/C7	CM	MTFC					
XCKR	F510/B1	MTFC	CM					
XCKR	G119/C7	CM	MTFC					
XCKR	G210/F1	MTFC	CM					
XCL	E109/A7	CM	MTFC					
XCL	E505/G0	CM	MTFC					
XCL	G119/A7	CM	MTFC					
XCLC	E109/C7	CM	MTFC					
XCLC	E110/G4	MTFC	CM					
XCLC	F508/H4	MTFC	CM					
XCLC	G119/C7	CM	MTFC					
XCLC	G208/H4	MTFC	CM					
XCP	E109/A5	CM	MTFC					
XCP	G119/A5	CM	MTFC					
XCR	E109/F5	CM	MTFC					
XCR	G119/F5	CM	MTFC					
XCS	E109/F5	CM	MTFC					
XCS	E410/B3	MTFC	CM					
XCS	G119/F5	CM	MTFC					
XDL	E109/B7	CM	MTFC					
XDL	G119/B7	CM	MTFC					
XF	E109/D5	CM	MTFC					
XF	E520/F5	CM	MTFC					
XF	G119/D5	CM	MTFC					
XFT	E109/F5	CM	MTFC					
XFT	E204/C1	CM	TLC					
XFT	E204/C1	CM	TLC	TL				
XFT	E204/E0	CM	MTFC	MTC				
XFT	G119/F5	CM	MTFC					

LEAD INDEX

	DWG SIZE	ISSUE
BELL LABORATORIES	C2	5
SFD-10-01		A607

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DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION
XFUT	E316/B9	CM	MTFC
XFUT	G511/B9	CM	MTFC
XHG	E109/D5	CM	MTFC
XHG	G119/D5	CM	MTFC
XJC	E109/A7	CM	MTFC
XJC	E521/F9	CM	MTFC
XJC	G119/B7	CM	MTFC
XJG	E109/E5	CM	MTFC
XJG	G119/E5	CM	MTFC
XJS	E109/E5	CM	MTFC
XJS	E527/H0	CM	
XJS	G119/E5	CM	MTFC
XLC	E109/E5	CM	MTFC
XLC	E528/H5	CM	MTFC
XLC	E529/H5	CM	MTFC
XLC	G119/E5	CM	MTFC
XLG	E109/E5	CM	MTFC
XLG	E407/C7	CM	MTFC
XLG	G119/E5	CM	MTFC
XLR	E109/C7	CM	MTFC
XLR	E110/G4	MTFC	CM
XLR	E520/E5	CM	MTFC
XLR	F508/G4	MTFC	CM
XLR	G119/C7	CM	MTFC
XLR	G208/H4	MTFC	CM
XLS	E109/F5	CM	MTFC
XLS	E526/H5	CM	MTFC
XLS	G119/F5	CM	MTFC
XLV	E109/E5	CM	MTFC
XLV	E409/H4	LL	ALL
XLV	G119/E5	CM	MTFC
XLV0-9	E409/H4	LL	ALL
XL0	E109/A5	CM	MTFC
XL0	E604/F1	MTFC	CM
XL0	G119/B5	CM	MTFC
XMB	F213/D6	CM	MTFC
XMRL	E107/C2	MTFC	CM
XMRL	E109/E7	CM	MTFC
XMRL	F507/C2	CM	
XMRL	G119/E7	CM	MTFC
XMRL	G207/D2	MTFC	CM
XN	E109/B5	CM	MTFC
XN	E305/G9	CM	MTFC
XN	G119/B5	CM	MTFC
XOB	E109/B5	CM	MTFC
XOB	E111/F4	MTFC	CM
XPG	E109/A7	CM	MTFC
XPG	G119/A7	CM	MTFC
XPT	E107/E2	MTFC	CM
XPT	E109/D7	CM	MTFC
XPT	F214/A8	CM	
XPT	G119/D7	CM	MTFC
XP6	E505/G0	CM	MTFC
XRL	E107/E2	MTFC	CM
XRL	E109/D7	CM	MTFC
XRL	G119/D7	CM	MTFC
XRS	E109/G5	CM	MTFC
XRS	G119/G5	CM	MTFC
XRS1	E109/B5	CM	MTFC
XRS1	E313/H6	MTFC	CM
XRS1	G119/B5	CM	MTFC
XS	E109/A5	CM	MTFC
XS	F207/B2	OSC	CM
XS	F207/D8	CM	MTFC
XS	G119/A5	CM	MTFC
XSA	E109/C5	CM	MTFC
XSA	F207/B2	OSC	CM
XSA	F207/D8	CM	MTFC
XSA	G119/C5	CM	MTFC
XSL	E533/F4	CM	MTFC
XSS	E109/C5	CM	MTFC
XSS	G119/C5	CM	MTFC
XT	E109/E7	CM	MTFC
XT	E110/F4	MTFC	CM
XT	F508/G4	MTFC	CM
XT	G119/D7	CM	MTFC
XT	G208/H4	MTFC	CM

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION			
XTB	E208/H8	CM	MTFC			
XTB1	E109/C5	CM	MTFC			
XTB1	G119/C5	CM	MTFC			
XTG	E209/H6	CM	MTFC			
XTG1	E109/C5	CM	MTFC			
XTG1	E209/H6	CM	MTFC			
XTG1	G119/D5	CM	MTFC			
XTRK	E108/F1	MTFC	CM			
XTRK	E109/C7	CM	MTFC			
XTRK	F510/B1	MTFC	CM			
XTRK	G119/C7	CM	MTFC			
XTRK	G210/F1	MTFC	CM			
XTRL	E107/A2	MTFC	CM			
XTRL	E109/D7	CM	MTFC			
XTRL	E110/F4	MTFC	CM			
XTRL	F507/A2	CM				
XTRL	F508/G4	MTFC	CM			
XTRL	G119/D7	CM	MTFC			
XTRL	G207/B2	MTFC	CM			
XTRL	G208/G4	MTFC	CM			
XTS	E109/G5	CM	MTFC			
XTS	E527/H0	CM				
XTS	G119/G5	CM	MTFC			
XTS1	E109/A5	CM	MTFC			
XTS1	E527/H0	CM				
XTS1	G119/A5	CM	MTFC			
XTV	E109/B7	CM	MTFC			
XTV	E111/F4	MTFC	CM			
XTV	G119/B7	CM	MTFC			
XT5	E109/C5	CM	MTFC			
XT5	F213/H3	CM	MTFC			
XT5	G119/C5	CM	MTFC			
XVGB	E109/F5	CM	MTFC			
XVGB	E407/E7	CM	MTFC			
XVGB	E410/A3	MTFC	CM			
XVGB	E411/A3	MTFC	CM			
XVGB	G119/F5	CM	MTFC			
X0B	G119/B5	CM	MTFC			
0	G114/H9	MFCS	OS			
0-2	G816/G7	OS	MFCS			
0A/0B	G504/D1	NGO	MTFC			
0BS'	F213/E6	CM	MTFC			
0H	G135/H5	IRL	AMRST			
0N	G118/G4	IR	IRL			
0N0-9	G121/D1	IRL	AMRST			
1	G114/G9	MFCS	OS			
1SE	F214/A1	TL	TLC	CM	MTFC	
10	G114/G9	MFCS	OS			
10	G816/F7	OS	MFCS			
10LV	E520/E1	TLC	CM			
11	E110/E1	MTC	MTFC			
11	E110/E3	MTC	MTFC	CM	ORMC	OR
12LV	E520/E1	TLC	CM			
+130	E106/A8	CM	MISC			
+130	E135/G4	PRTD	CM			
+130	F506/A8	CM	MISC			
+130	G206/A8	CM	MISC			
2	G114/H9	MFCS	OS			
2DT	G208/A3	MTC	MTFC	CM	IRMC	IR
2SA	F214/B1	TL	TLC	CM	MTFC	
3NA	F214/B1	TL	TLC	CM	MTFC	
4	G114/G9	MFCS	OS			
4	G816/G7	OS	MFCS			
4DG	F212/E7	CM	MTFC			
4DG	F212/F7	CM	OSC	IMGS		
4NE	F214/C1	TL	TLC	CM	MTFC	
5DG	F212/F7	CM	MTFC			
5DG	F212/F7	CM	OSC	IMGS		
5ST	F214/C1	TL	TLC	CM	MTFC	
6NT	F214/C1	TL	TLC	CM	MTFC	
7	G114/G9	MFCS	OS			
7	G816/G7	OS	MFCS			
7RN	F214/D1	TL	TLC	CM	MTFC	
8SP	F214/D1	TL	TLC	CM	MTFC	
9NP	F214/E1	TL	TLC	CM	MTFC	

DESIG	LOCATION	FROM CIRCUIT	TO/FROM CIRCUIT OR LOCATION

ISSUE	DWG SIZE	
5	C2	LEAD INDEX
A608	SFD-10-01	BELL LABORATORIES

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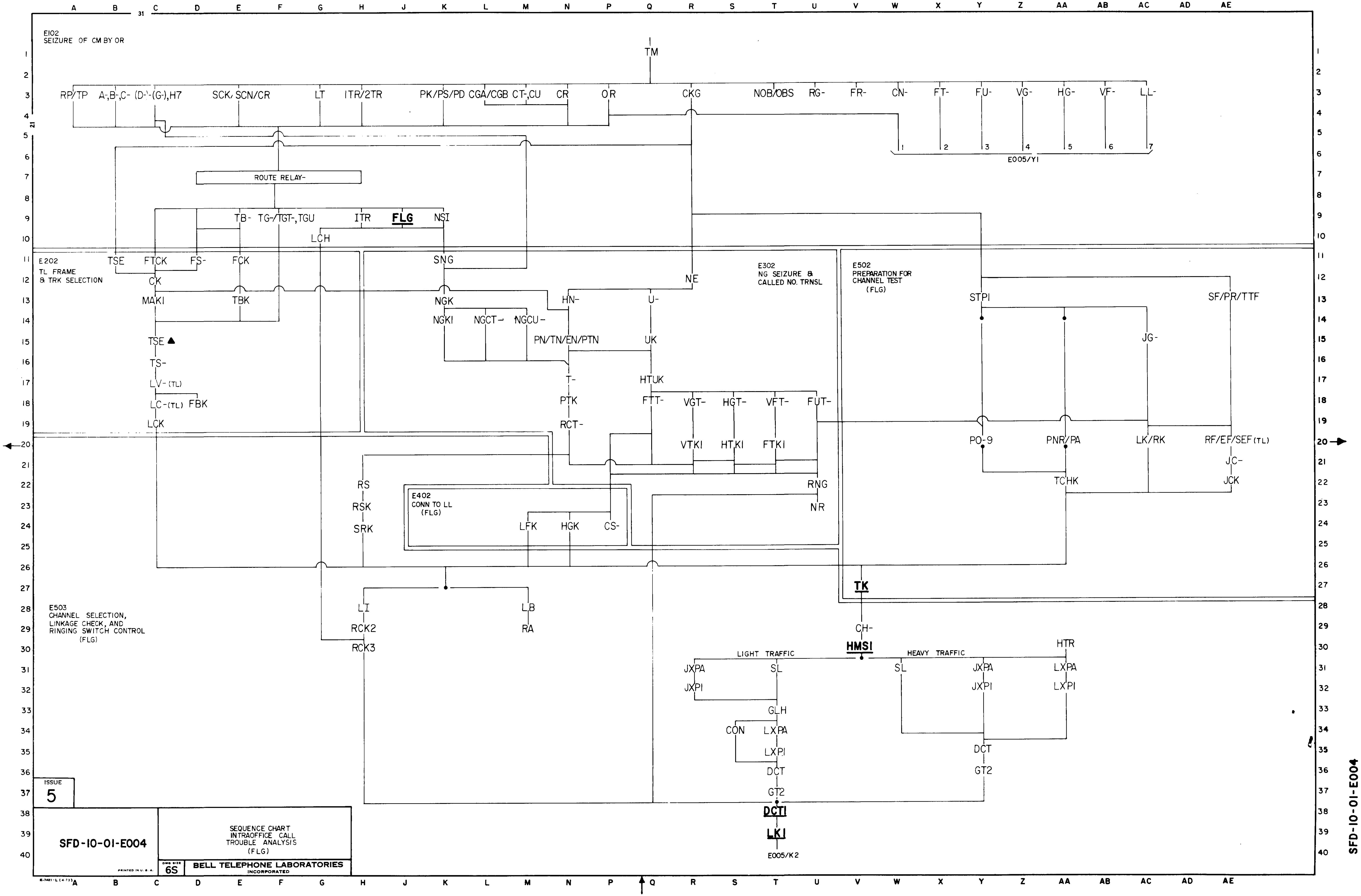
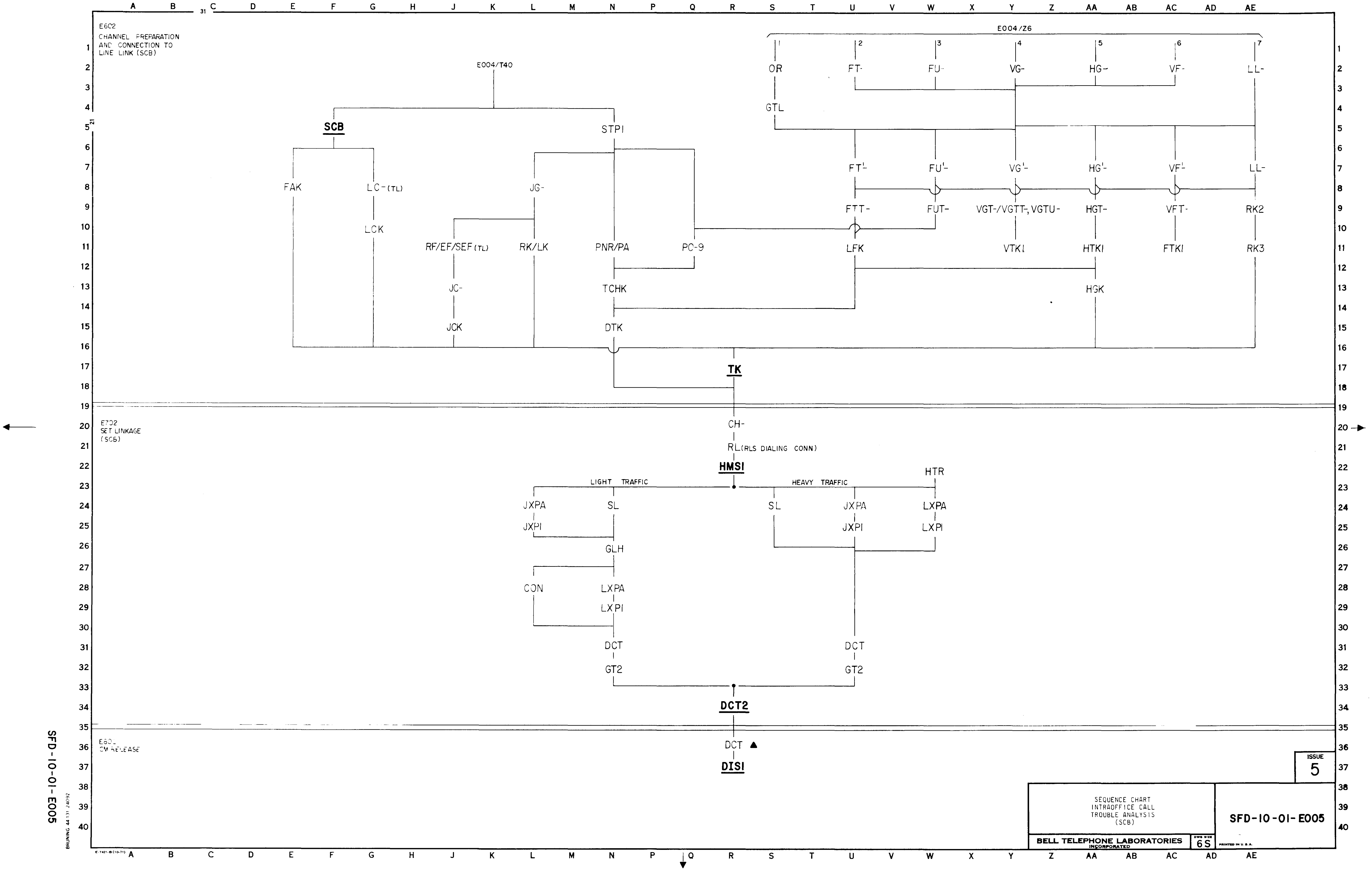


SFD-10-01-E004

SEQUENCE CHART
INTRAOFFICE CALL
TROUBLE ANALYSIS
(FLG)

BELL TELEPHONE LABORATORIES
INCORPORATED



SEQUENCE CHART
INTRAOFFICE CALL
TROUBLE ANALYSIS
(SCB)

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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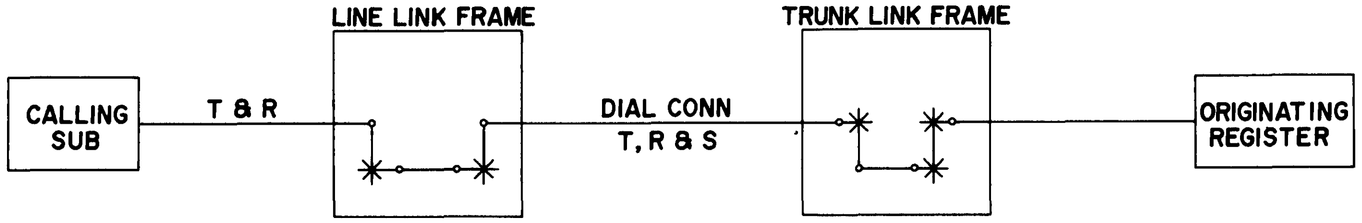
ISSUE 5

SFD-10-01-E005

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

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ISSUE
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PART E1
INPUT TO COMPLETING MARKER AND
CODE TRANSLATION

SFD-10-01-E101

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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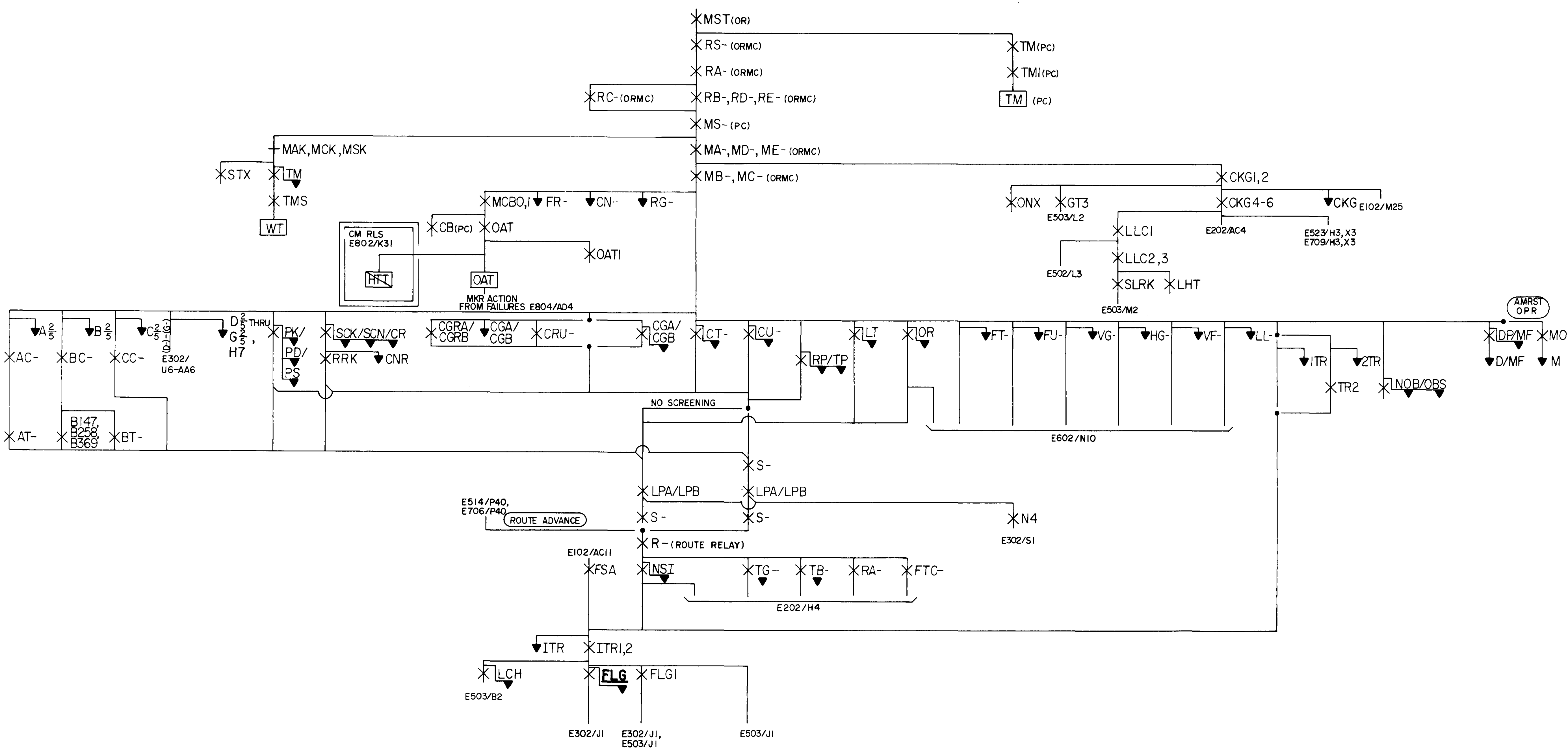
SFD-10-01-E101
2 SHEETS, SHEET 1

SEIZURE OF COMPLETING MARKER BY ORIGINATING REGISTER



ISSUE
5

SFD-10-01-E102

SEQUENCE CHART
SEIZURE OF COMPLETING MARKER
BY ORIGINATING REGISTER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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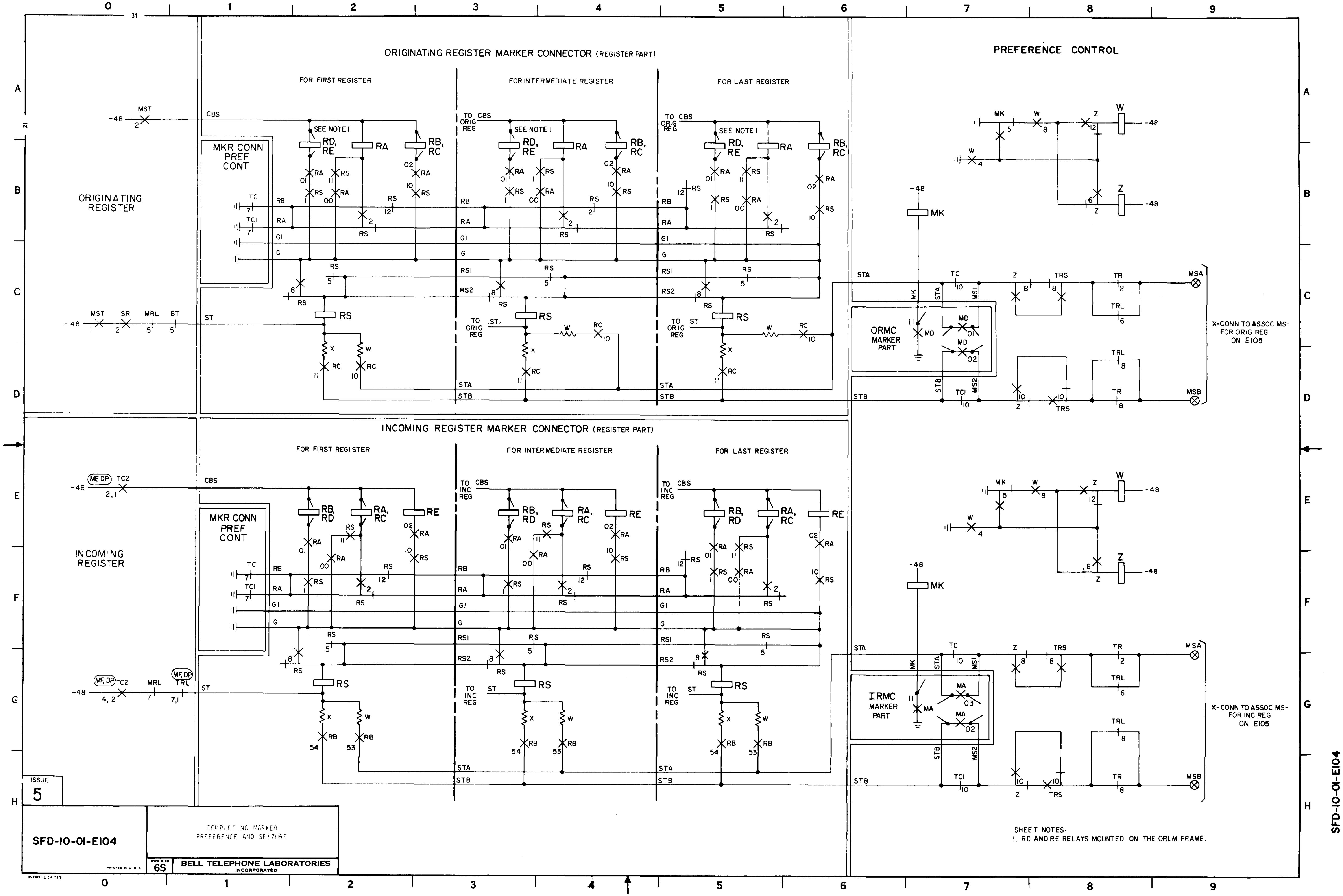
E-7481-L (4-73)

SFD-10-01-E102



SHEET NOTES:
1. RD AND RE RELAYS MOUNTED ON THE ORLM FRAME.

ISSUE
5

SFD-10-01-E104

COMPLETING MARKER
PREFERENCE AND SEIZURE

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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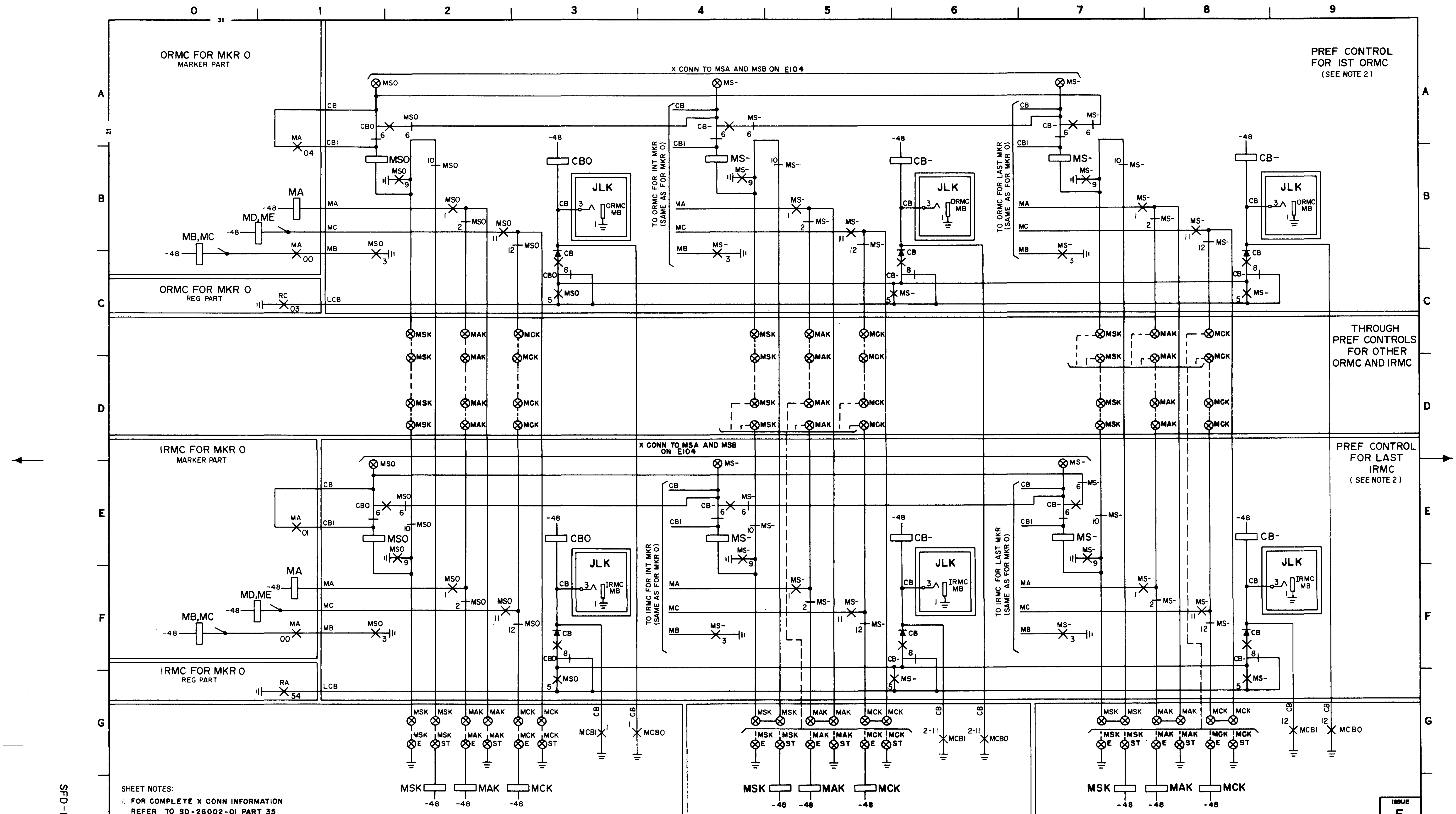
E-7481-L (4-73)



ORMC FOR MKR 0
MARKER PART
ORMC FOR MKR 0
REG PART
IRMC FOR MKR 0
MARKER PART
IRMC FOR MKR 0
REG PART
X CONN TO MSA AND MSB ON E104
X CONN TO MSA AND MSB ON E104
PREF CONTROL FOR 1ST ORMC (SEE NOTE 2)
THROUGH PREF CONTROLS FOR OTHER ORMC AND IRMC
PREF CONTROL FOR LAST IRMC (SEE NOTE 2)
TO ORMC FOR INT MKR (SAME AS FOR MKR 0)
TO ORMC FOR LAST MKR (SAME AS FOR MKR 0)
TO IRMC FOR INT MKR (SAME AS FOR MKR 0)
TO IRMC FOR LAST MKR (SAME AS FOR MKR 0)
JLK
ORMC MB
IRMC MB
MSO
MS-
CBO
CB-
MA
MD,ME
MB,MC
MSK
MAK
MCK
MCBI
MCBO
-48

SHEET NOTES:

1. FOR COMPLETE X CONN INFORMATION REFER TO SD-26002-01 PART 35
SD-26029-01 NOTE 405 & 405A
2. PREF CKT SHOWN IS APP FIG. 7 RATED STD ON ISS 10B.

COMPLETING MARKER 0

INTERMEDIATE COMPLETING MARKER

LAST COMPLETING MARKER

ISSUE
5

COMPLETING MARKER
PREFERENCE AND SEIZURE

SFD-10-01-E105

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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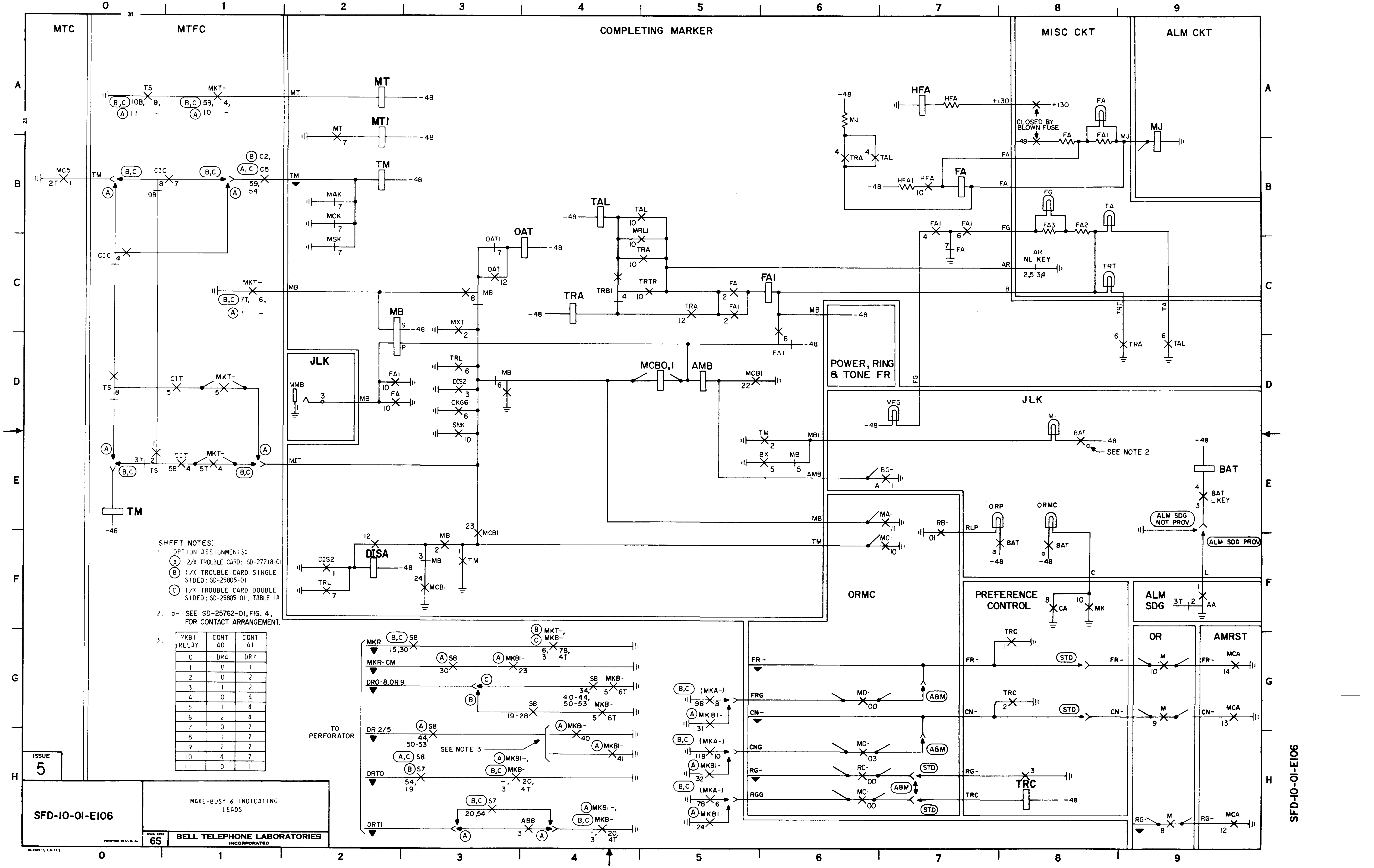
SFD-10-01-E105



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
2. a- SEE SD-25762-01, FIG. 4, FOR CONTACT ARRANGEMENT.
3.

MKBI RELAY	CONT 40	CONT 41
0	DR4	DR7
1	0	1
2	0	2
3	1	2
4	0	4
5	1	4
6	2	4
7	0	7
8	1	7
9	2	7
10	4	7
11	0	1

ISSUE
5

SFD-10-01-E106

PRINTED IN U.S.A.

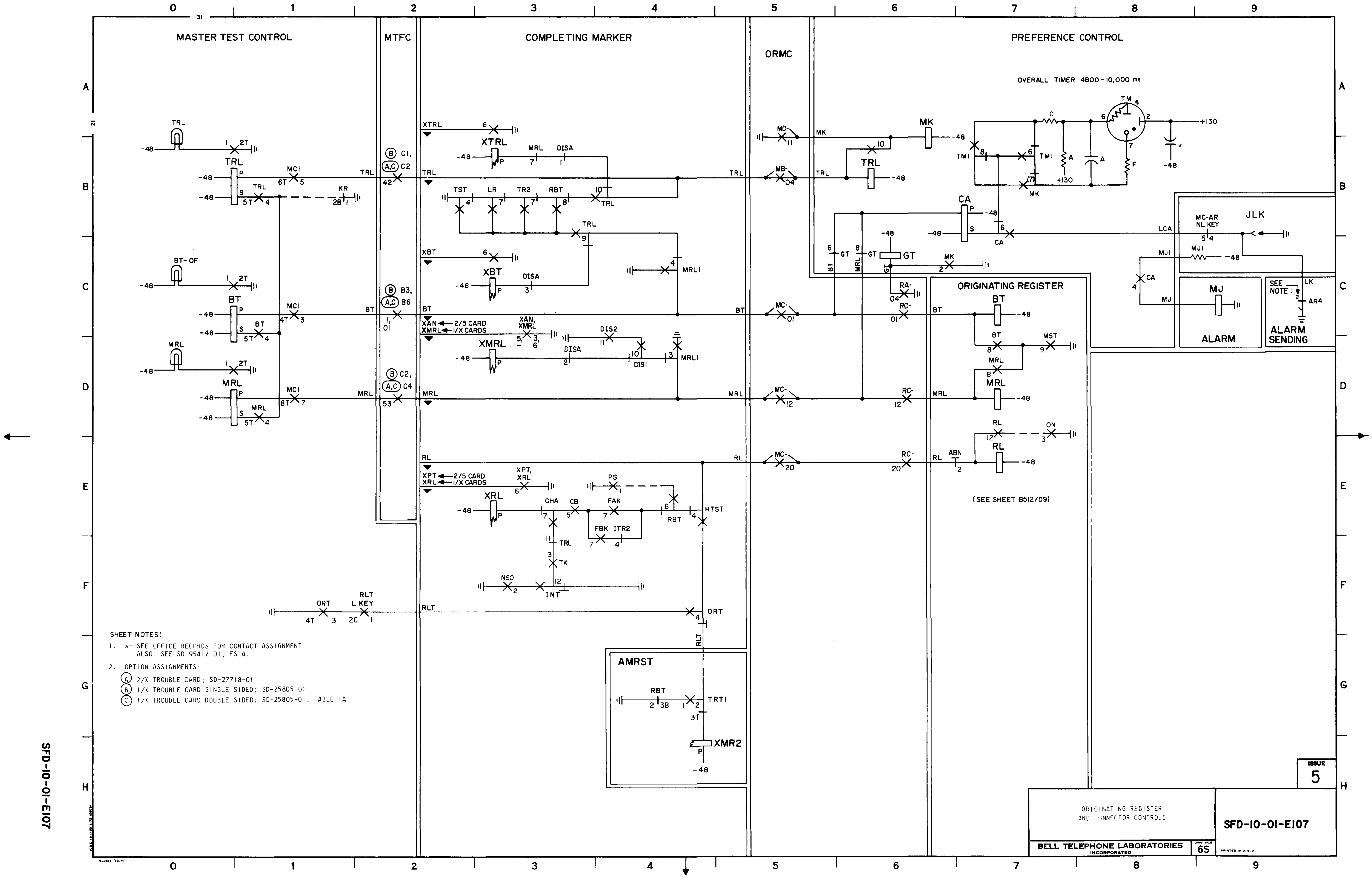
MAKE-BUSY & INDICATING
LEADS

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7421-L (4-73)

SFD-10-01-E106



SHEET NOTES:

1. a- SEE OFFICE RECORDS FOR CONTACT ASSIGNMENT.
   ALSO, SEE SD-95417-01, FS 4.
2. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

ISSUE
5

ORIGINATING REGISTER
AND CONNECTOR CONTROLS

SFD-10-01-E107

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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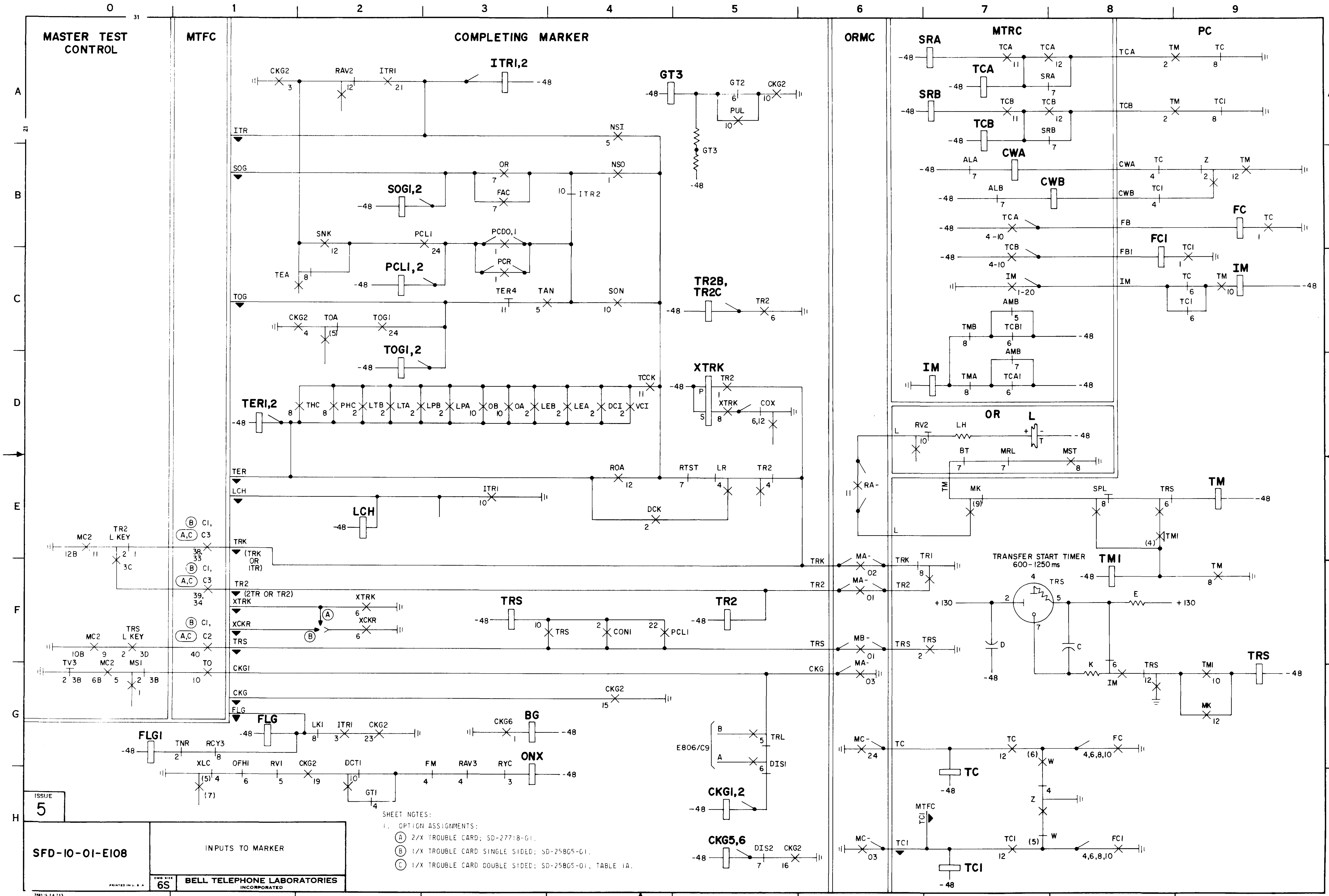


SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01.
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01.
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A.

ISSUE
5

SFD-10-01-E108

INPUTS TO MARKER

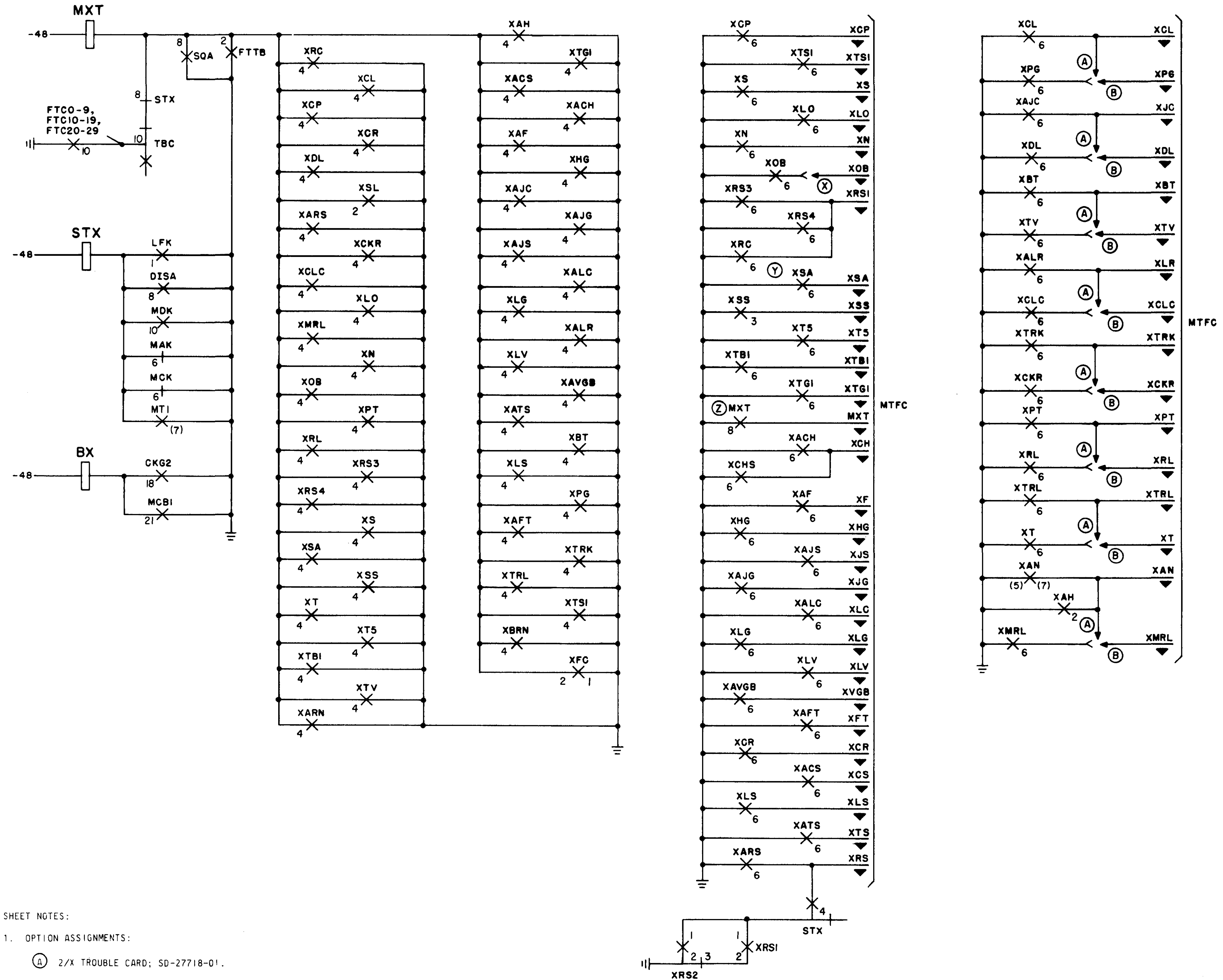
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

SFD-10-01-E108

COMPLETING MARKER



SHEET NOTES:

1. OPTION ASSIGNMENTS:

   Ⓐ 2/X TROUBLE CARD; SD-27718-01.

   Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01.

   Ⓧ (A & M) -XOB PUNCH PROVIDED WHEN MXT PUNCH NOT PROVIDED.

   Ⓨ U TYPE SENDER CONN AND AMA PROVIDED.

   Ⓩ MXT PUNCH PROVIDED. (DOUBLE SIDED 1/X OR 2/X CARD.)

STANDING CROSS RELAY- TROUBLE INDICATIONS	SFD-10-01-E109
BELL TELEPHONE LABORATORIES INCORPORATED	6S

ISSUE 5

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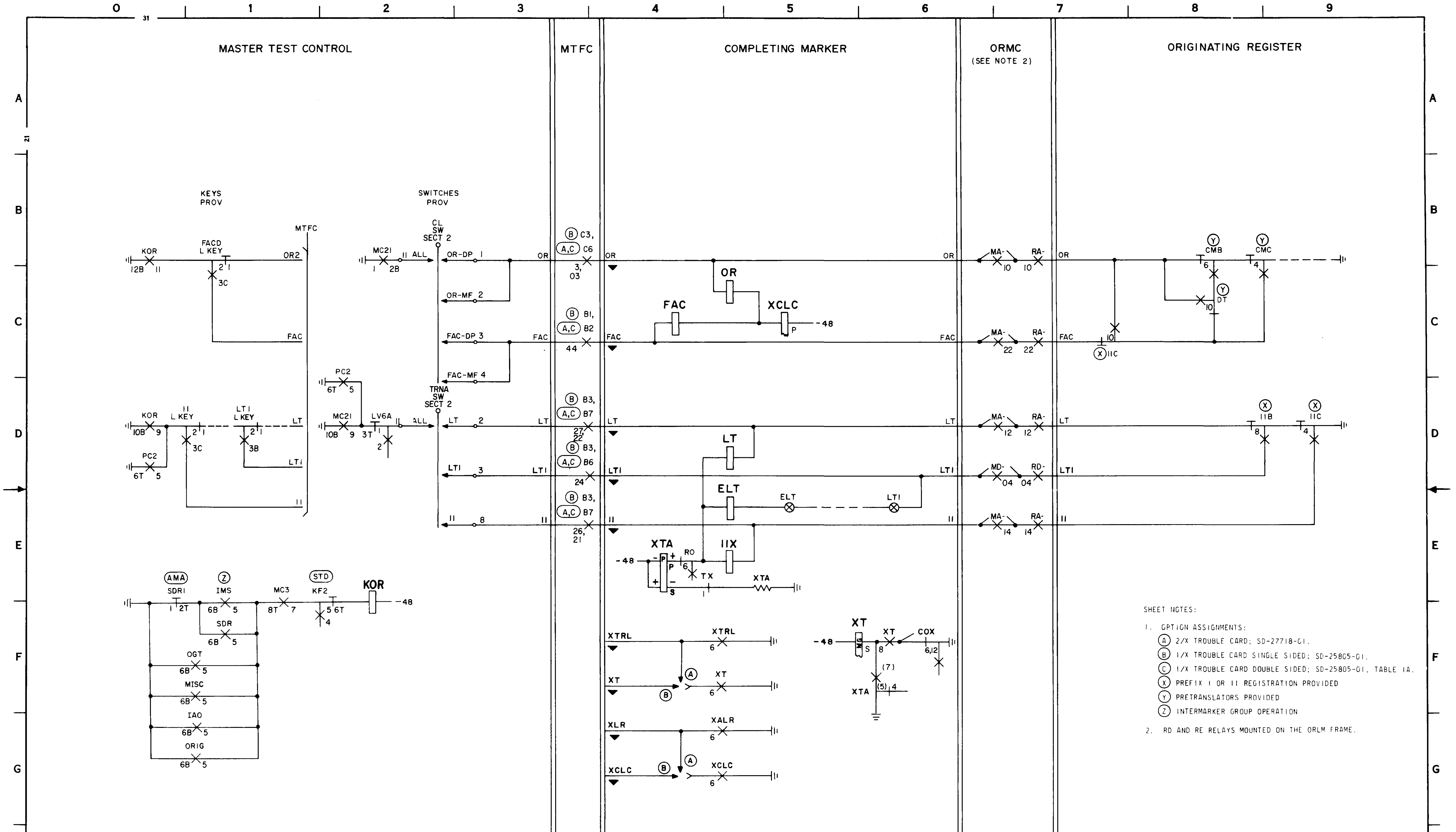
SFD-10-01-E109



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01.
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01.
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A.
   - Ⓧ PREFIX 1 OR 11 REGISTRATION PROVIDED
   - Ⓨ PRETRANSLATORS PROVIDED
   - Ⓩ INTERMARKER GROUP OPERATION
2. RD AND RE RELAYS MOUNTED ON THE ORLM FRAME.

ISSUE
5

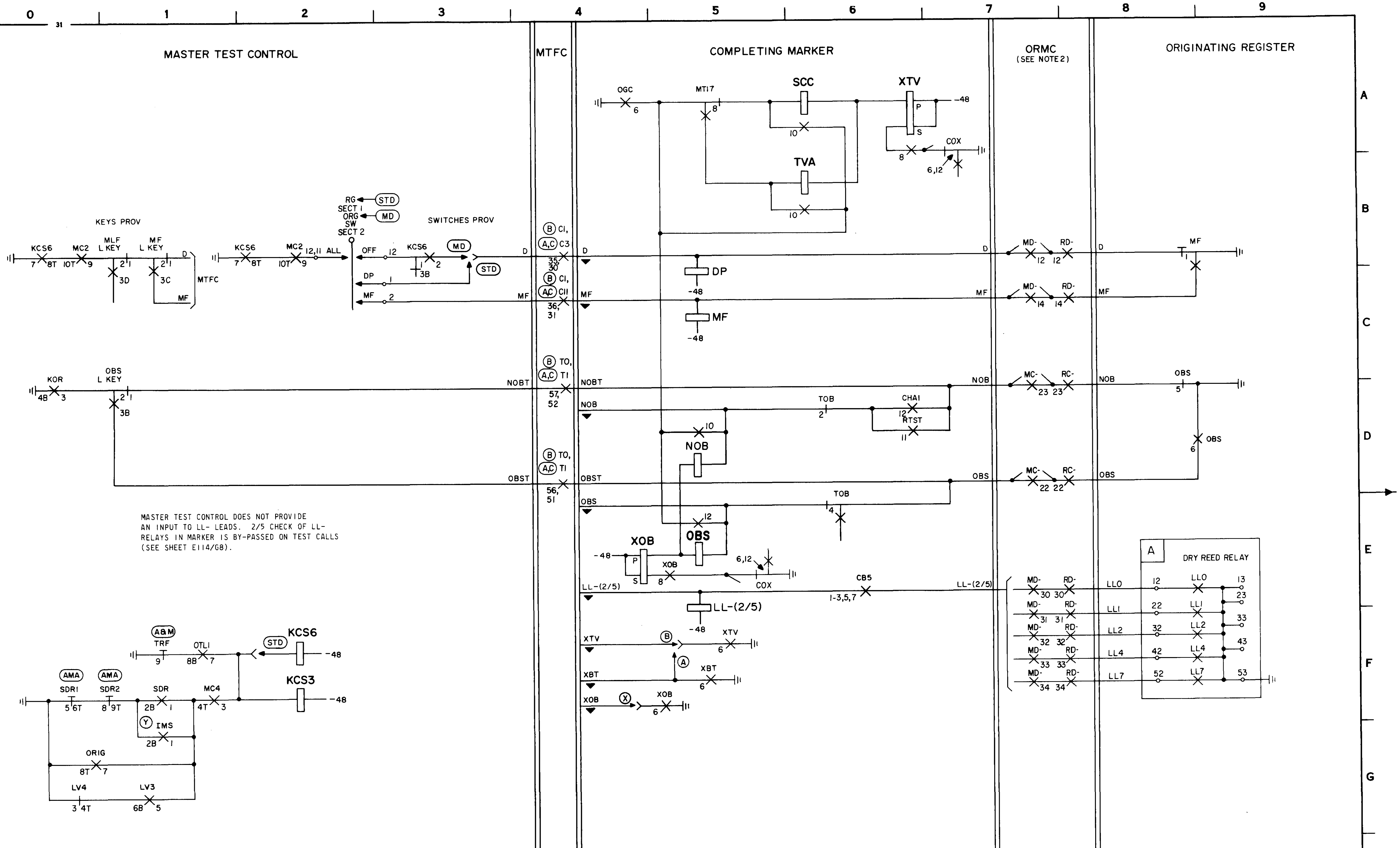
SFD-10-01-E110

TRANSLATOR CONTROL LEADS

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.



MASTER TEST CONTROL DOES NOT PROVIDE AN INPUT TO LL- LEADS. 2/5 CHECK OF LL- RELAYS IN MARKER IS BY-PASSED ON TEST CALLS (SEE SHEET E114/G8).

SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01.
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01.
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A.
   - Ⓧ (A&M) -XOB PUNCH PROVIDED WHEN MXT PUNCH NOT PROVIDED.
   - Ⓨ INTERMARKER GROUP OPERATION.
2. RD AND RE RELAYS MOUNTED ON THE ORLM FRAME.

ISSUE 5

INPUTS FROM ORIGINATING
REGISTER TO MARKER

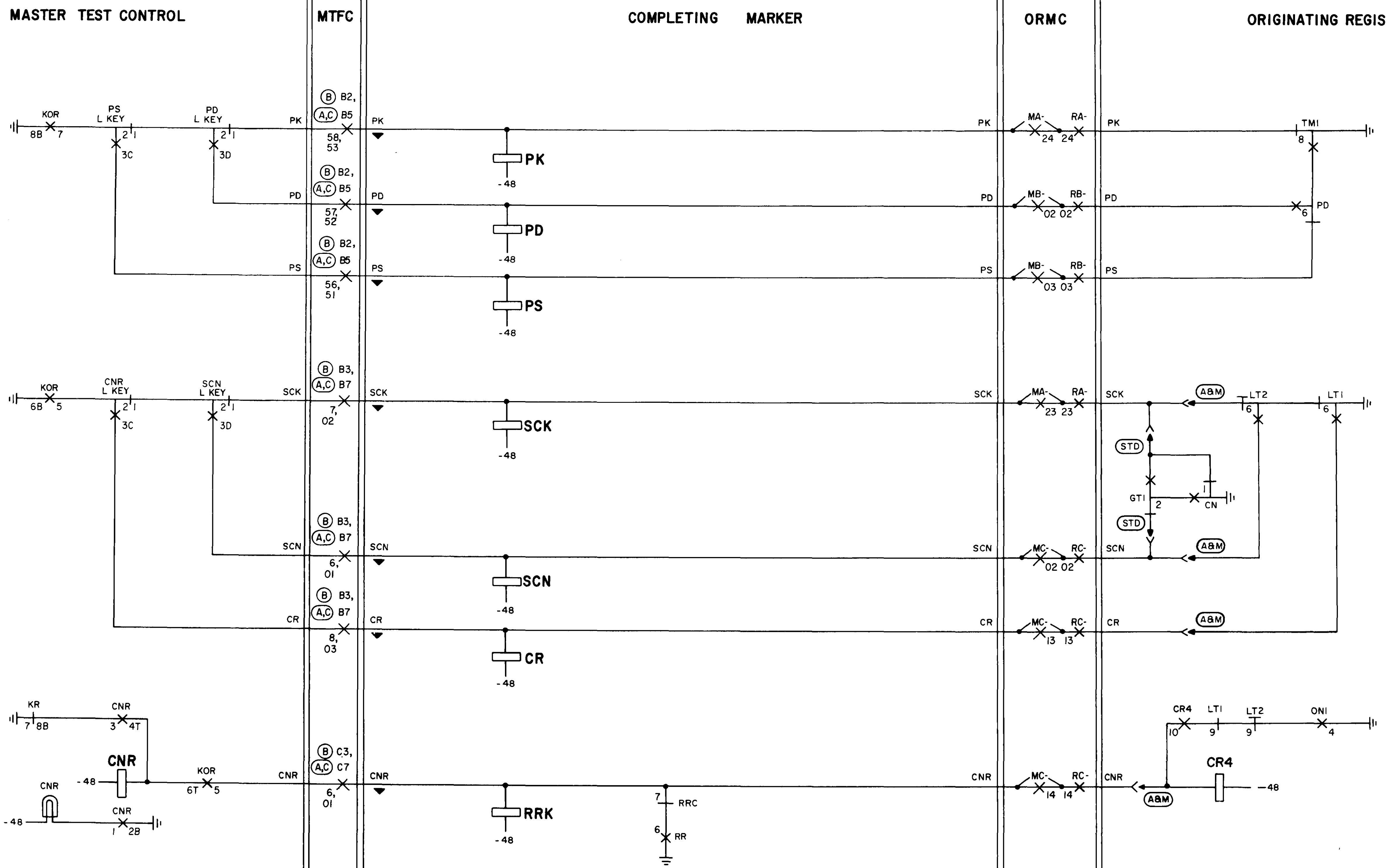
SFD-10-01-E111

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-E111



SHEET NOTES:
1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

ISSUE
5

SFD-10-01-E112

INPUTS FROM ORIGINATING
REGISTER TO MARKER

DWG SIZE 6S
BELL TELEPHONE LABORATORIES
INCORPORATED

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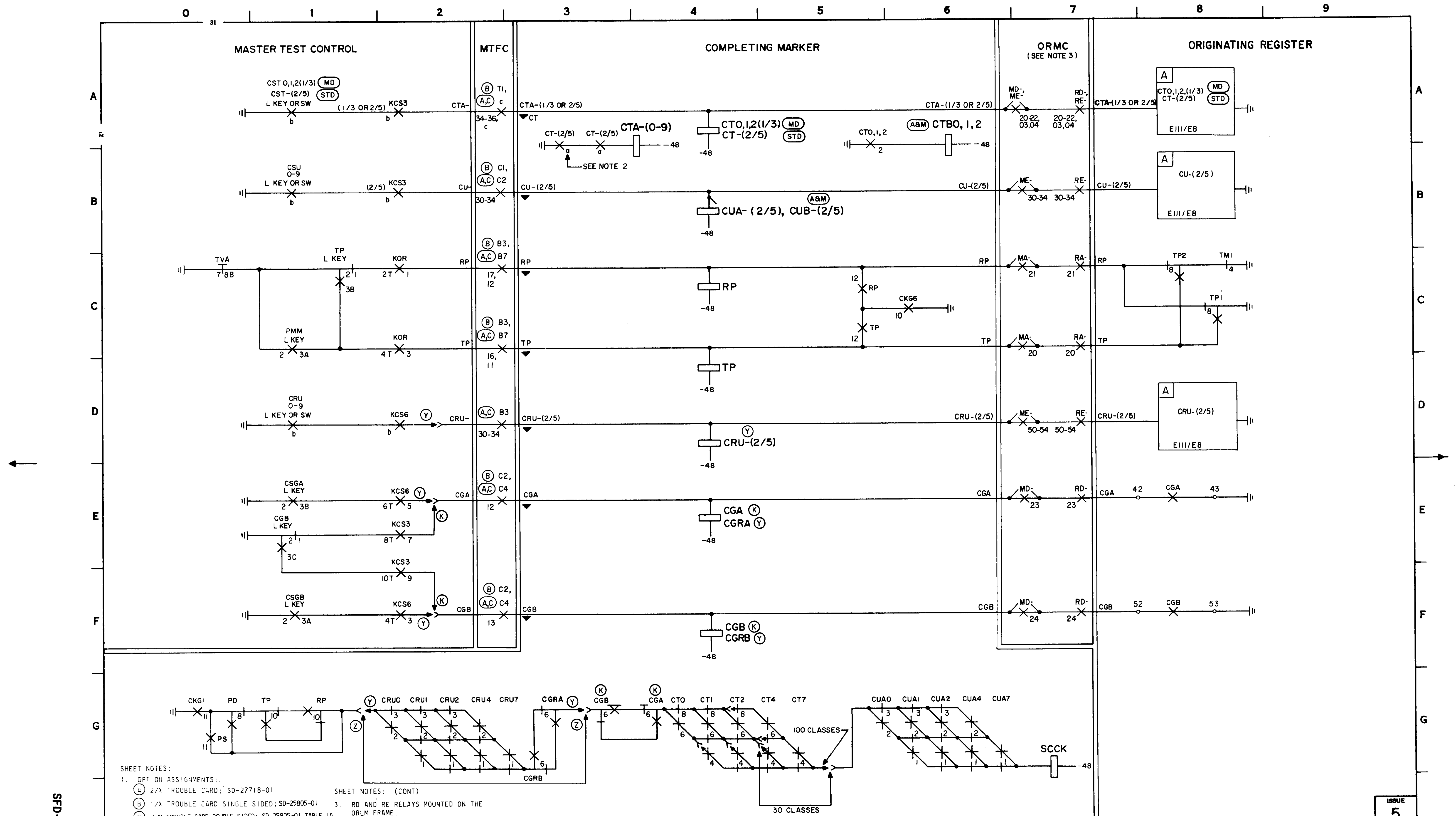
E-7481-L (4-73)

SFD-10-01-E112



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓚ 60 CLASSES OF SERVICE PROV (A & M)
   - Ⓨ RATE TREATMENT PROV
   - Ⓩ RATE TREATMENT NOT PROV
2. a- SEE SD-26002-01, FS 10, FOR CONTACT ARRANGEMENT.
   b- SEE SD-25800-01, FS 22, FOR CONTACT ARRANGEMENT.
   c- SEE SD-25805-01, TABLE 1A AND SD-27718-01, TABLE 1 FOR CONTACT ARRANGEMENT AND DESIGNATIONS.

SHEET NOTES: (CONT)

3. RD AND RE RELAYS MOUNTED ON THE ORLM FRAME.

ISSUE
5

INPUTS FROM ORIGINATING
REGISTER TO MARKER

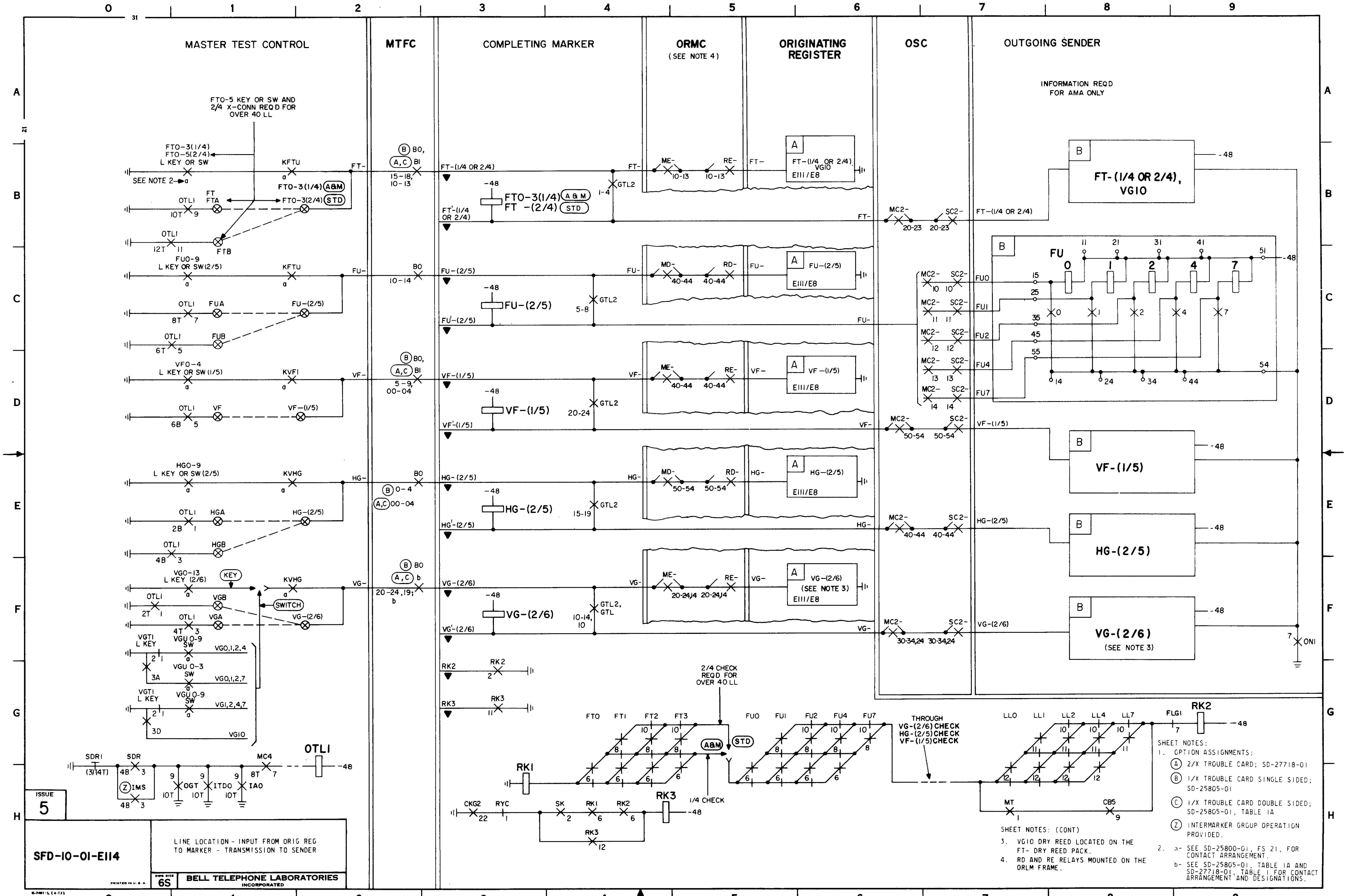
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

SFD-10-01-E113

PRINTED IN U. S. A.

E-7421 (10-71)



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓩ INTERMARKER GROUP OPERATION PROVIDED.
2. a- SEE SD-25800-01, FS 21, FOR CONTACT ARRANGEMENT.
   b- SEE SD-25805-01, TABLE 1A AND SD-27718-01, TABLE 1 FOR CONTACT ARRANGEMENT AND DESIGNATIONS.

SHEET NOTES: (CONT)

3. VG10 DRY REED LOCATED ON THE FT- DRY REED PACK.
4. RD AND RE RELAYS MOUNTED ON THE ORLM FRAME.

ISSUE
5

SFD-10-01-E114

LINE LOCATION - INPUT FROM ORIG REG
TO MARKER - TRANSMISSION TO SENDER

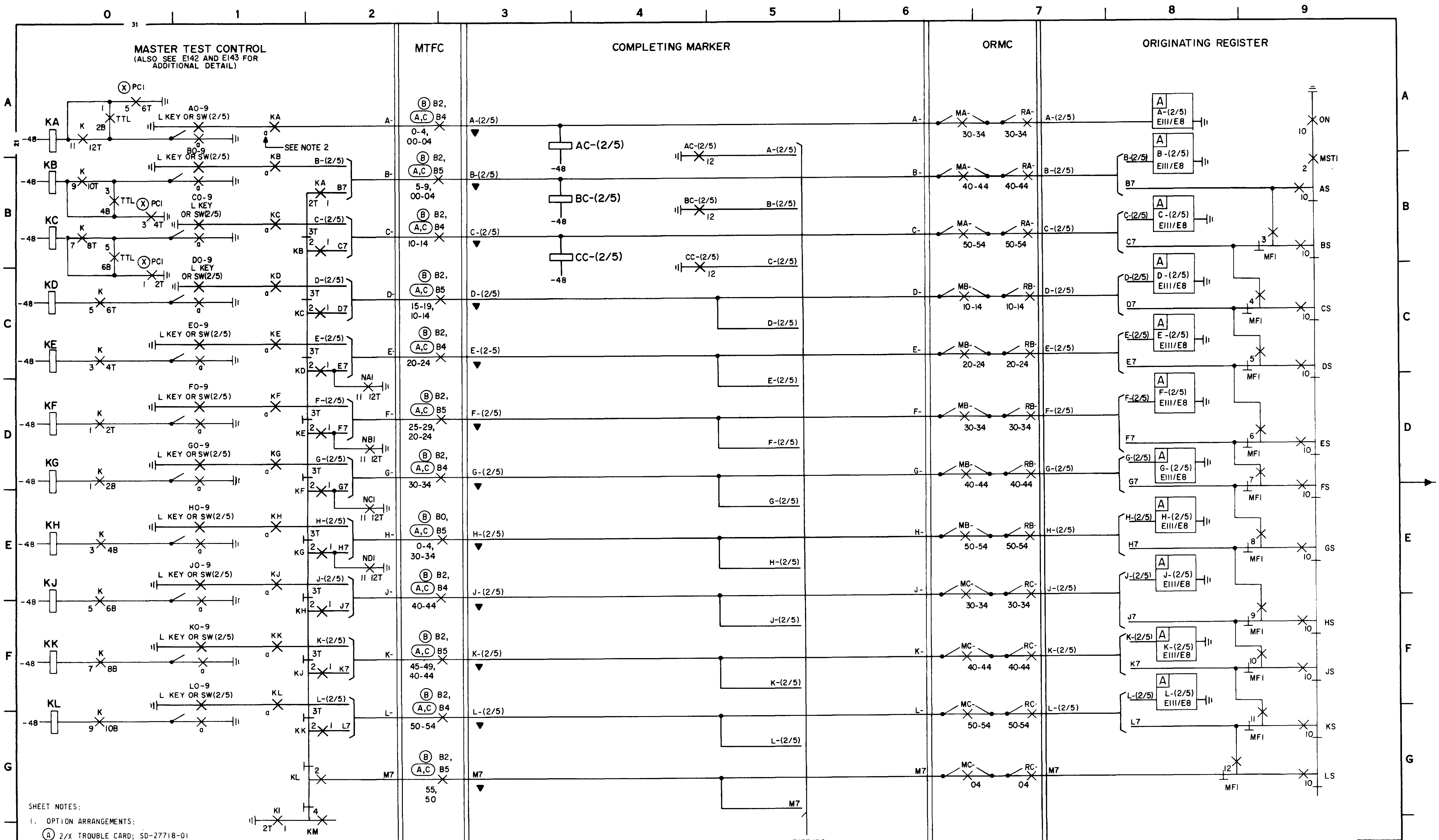
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

E-7481-L (4-73)

SFD-10-01-E114



SHEET NOTES:

1. OPTION ARRANGEMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓧ PULSE CONVERSION PROVIDED
2. a- SEE SD-25800-01, FS 14, FOR CONTACT ARRANGEMENT.

ISSUE
5

CALLED NUMBER INPUT FROM
ORIGINATING REGISTER TO MARKER

SFD-10-01-E115

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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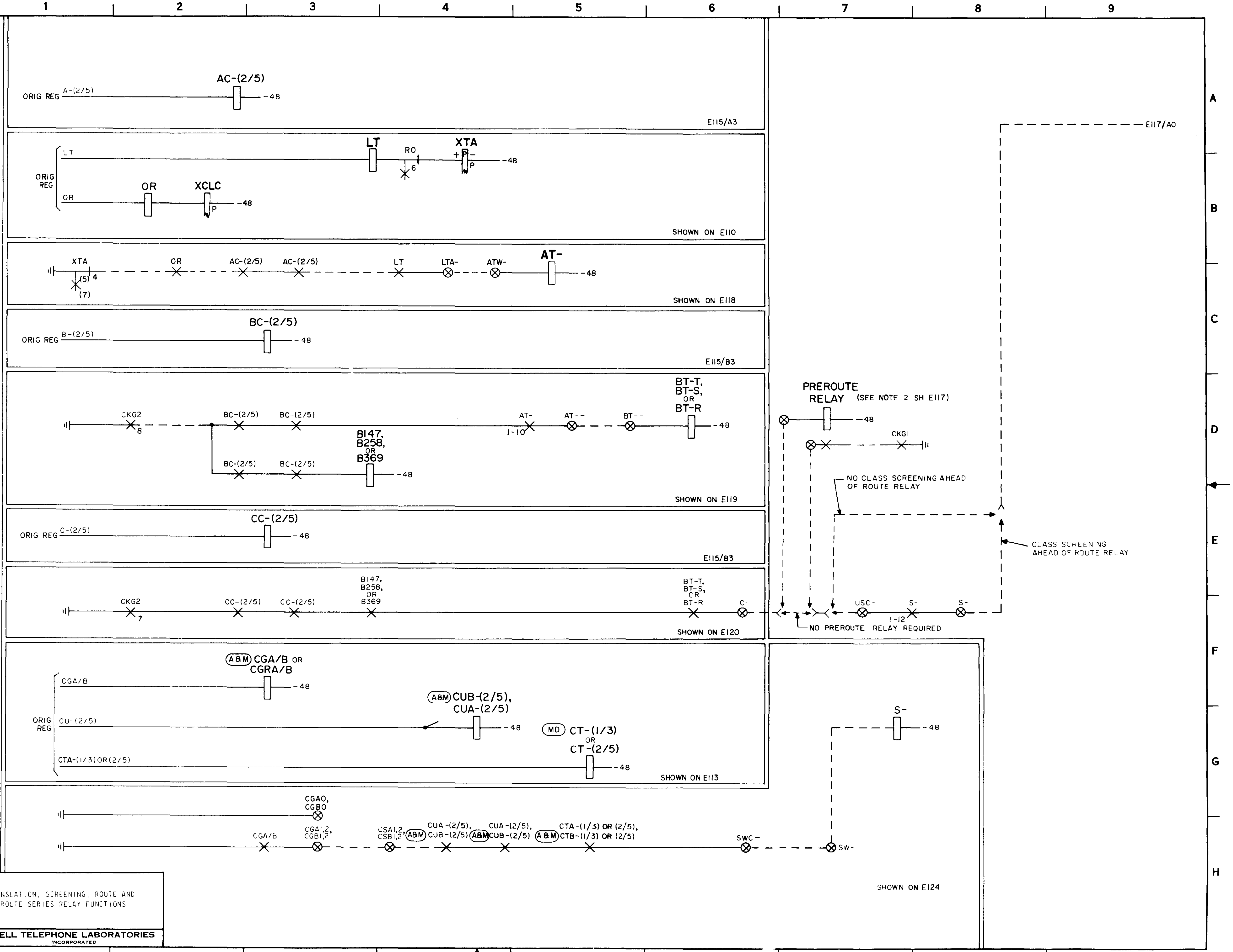
E-7481 (10-71)

SFD-10-01-E115



ISSUE
5

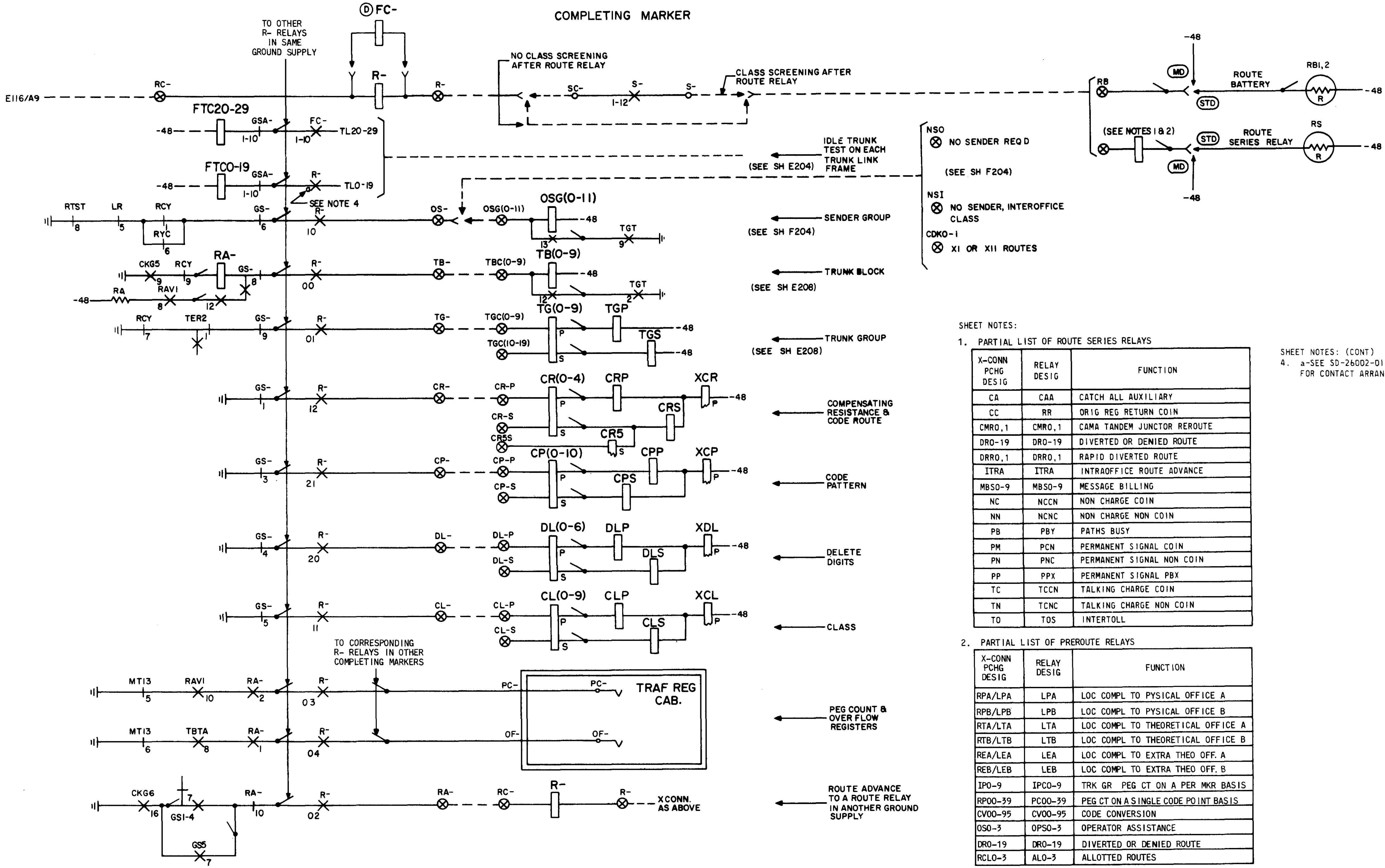
SFD-10-01-E116

TRANSLATION, SCREENING, ROUTE AND
ROUTE SERIES RELAY FUNCTIONS

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E116



SHEET NOTES:

1. PARTIAL LIST OF ROUTE SERIES RELAYS

X-CONN PCHG DESIG	RELAY DESIG	FUNCTION
CA	CAA	CATCH ALL AUXILIARY
CC	RR	ORIG REG RETURN COIN
CMR0,1	CMR0,1	CAMA TANDEM JUNCTOR REROUTE
DR0-19	DR0-19	DIVERTED OR DENIED ROUTE
DRR0,1	DRR0,1	RAPID DIVERTED ROUTE
ITRA	ITRA	INTRAOFFICE ROUTE ADVANCE
MBS0-9	MBS0-9	MESSAGE BILLING
NC	NCCN	NON CHARGE COIN
NN	NCNC	NON CHARGE NON COIN
PB	PBY	PATHS BUSY
PM	PCN	PERMANENT SIGNAL COIN
PN	PNC	PERMANENT SIGNAL NON COIN
PP	PPX	PERMANENT SIGNAL PBX
TC	TCCN	TALKING CHARGE COIN
TN	TCNC	TALKING CHARGE NON COIN
TO	TOS	INTERTOLL

2. PARTIAL LIST OF PREROUTE RELAYS

X-CONN PCHG DESIG	RELAY DESIG	FUNCTION
RPA/LPA	LPA	LOC COMPL TO PYSICAL OFFICE A
RPB/LPB	LPB	LOC COMPL TO PYSICAL OFFICE B
RTA/LTA	LTA	LOC COMPL TO THEORETICAL OFFICE A
RTB/LTB	LTB	LOC COMPL TO THEORETICAL OFFICE B
REA/LEA	LEA	LOC COMPL TO EXTRA THEO OFF. A
REB/LEB	LEB	LOC COMPL TO EXTRA THEO OFF. B
IP0-9	IPC0-9	TRK GR PEG CT ON A PER MKR BASIS
RP00-39	PC00-39	PEG CT ON A SINGLE CODE POINT BASIS
CV00-95	CV00-95	CODE CONVERSION
OS0-3	OPS0-3	OPERATOR ASSISTANCE
DR0-19	DR0-19	DIVERTED OR DENIED ROUTE
RCL0-3	AL0-3	ALLOTTED ROUTES

3. OPTION ASSIGNMENTS:

Ⓓ TRIPLE TRUNK LINK FRAME OPERATION.

SHEET NOTES: (CONT)

4. a-SEE SD-26002-01,FS20, FOR CONTACT ARRANGEMENT.

ISSUE
5

TRANSLATION, SCREENING, ROUTE
AND ROUTE SERIES RELAY FUNCTIONS

SFD-10-01-E117

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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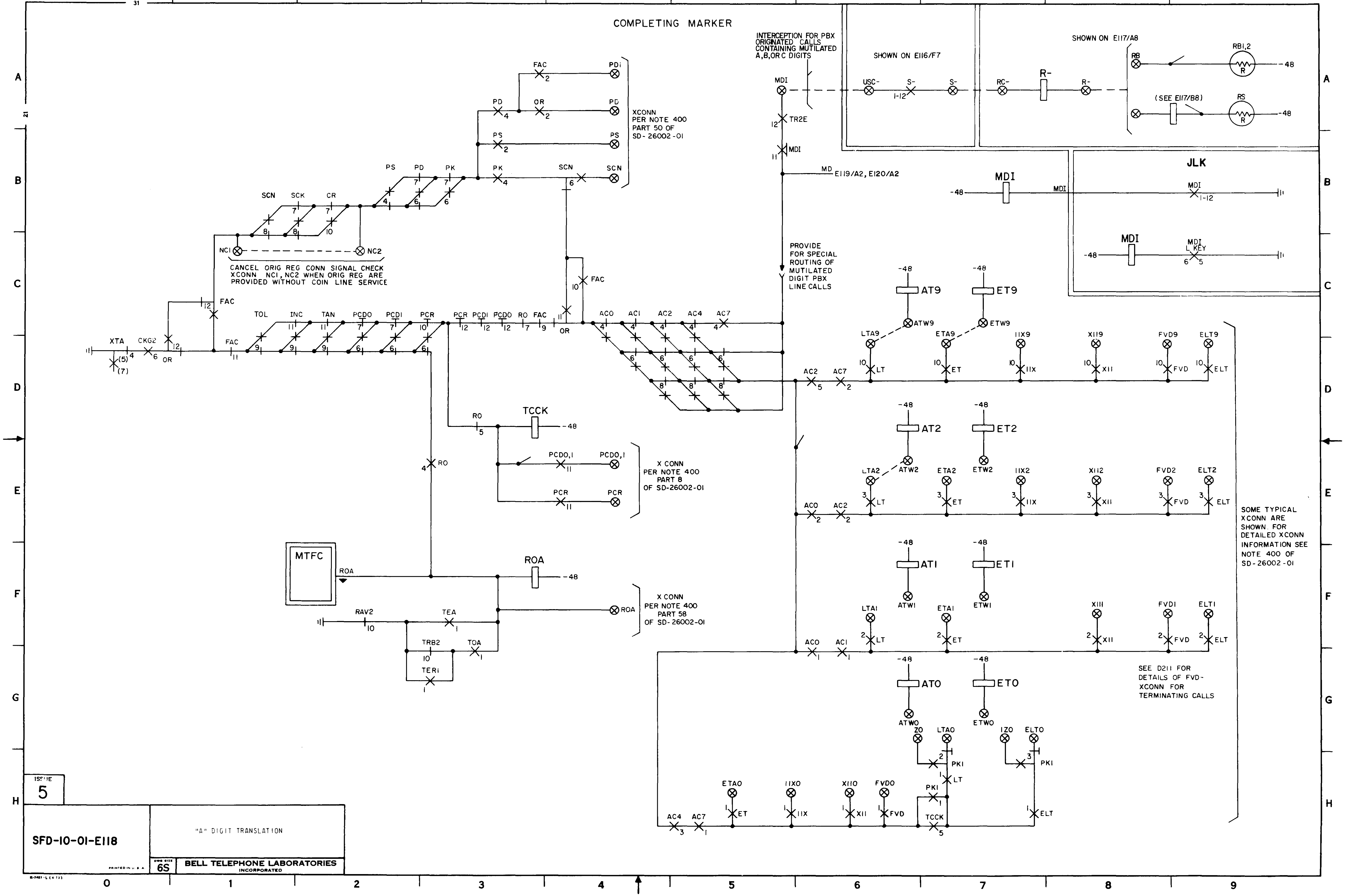
COMPLETING MARKER


INTERCEPTION FOR PBX ORIGINATED CALLS CONTAINING MUTILATED A,B,OR C DIGITS
SHOWN ON E116/F7
SHOWN ON E117/A8
(SEE E117/B8)
RB1,2
RS
JLK
MDI
XCONN PER NOTE 400 PART 50 OF SD-26002-01
CANCEL ORIG REG CONN SIGNAL CHECK XCONN NC1, NC2 WHEN ORIG REG ARE PROVIDED WITHOUT COIN LINE SERVICE
MD E119/A2, E120/A2
PROVIDE FOR SPECIAL ROUTING OF MUTILATED DIGIT PBX LINE CALLS
TCCK
X CONN PER NOTE 400 PART 8 OF SD-26002-01
MTFC
ROA
X CONN PER NOTE 400 PART 58 OF SD-26002-01
AT9
ET9
AT2
ET2
AT1
ET1
AT0
ET0
SOME TYPICAL XCONN ARE SHOWN FOR DETAILED XCONN INFORMATION SEE NOTE 400 OF SD-26002-01
SEE D211 FOR DETAILS OF FVD-XCONN FOR TERMINATING CALLS
-48

ISSUE 5

SFD-10-01-E118

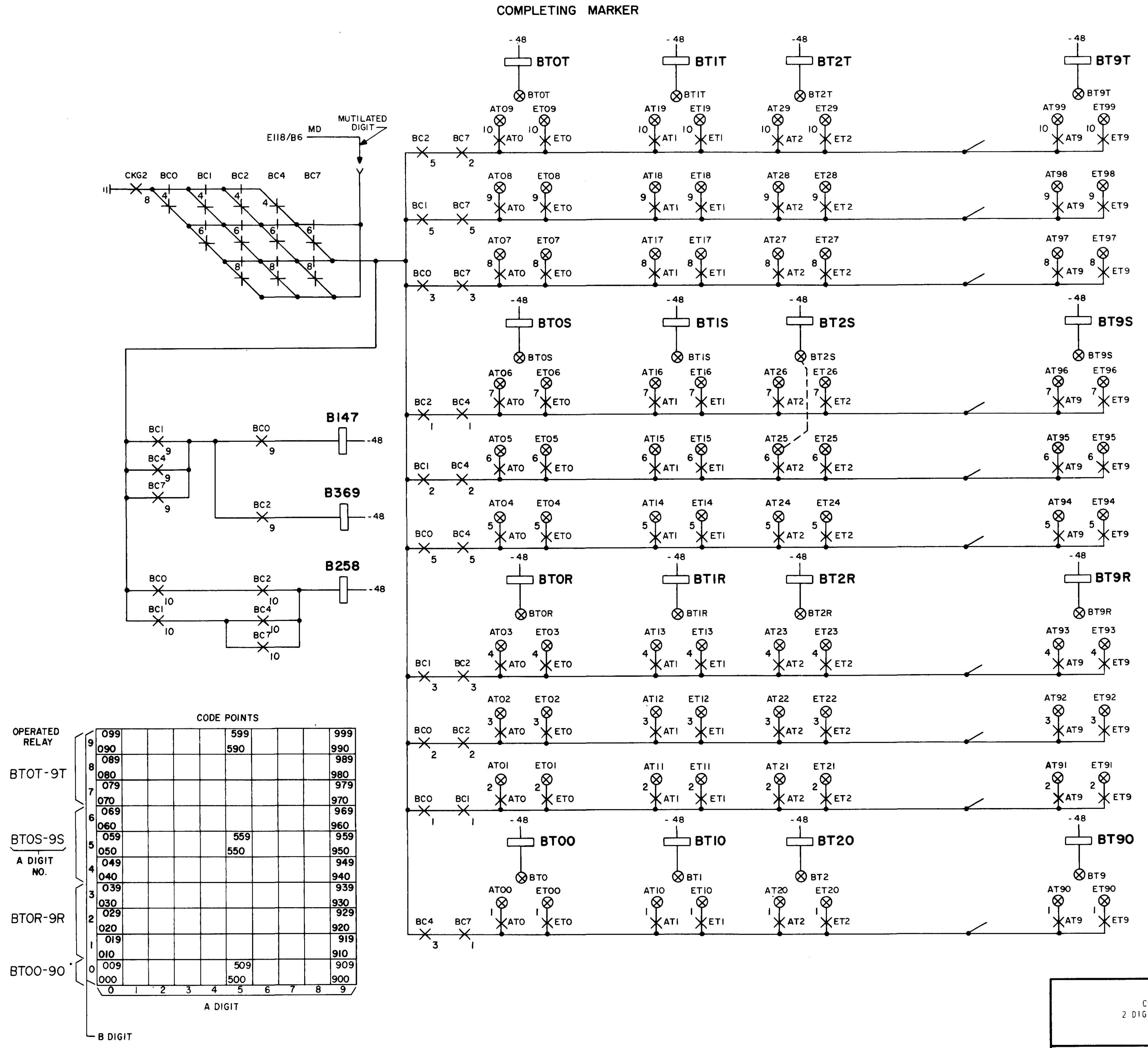
"A" DIGIT TRANSLATION

6S

BELL TELEPHONE LABORATORIES INCORPORATED

SFD-10-01-E118

COMPLETING MARKER



CODE POINTS

OPERATED RELAY	B DIGIT	0	1	2	3	4	5	6	7	8	9
BTOT-9T	9	099 090					599 590				999 990
	8	089 080									989 980
	7	079 070									979 970
BTOS-9S A DIGIT NO.	6	069 060									969 960
	5	059 050					559 550				959 950
	4	049 040									949 940
BTOR-9R	3	039 030									939 930
	2	029 020									929 920
	1	019 010									919 910
BTOO-90	0	009 000					509 500				909 900

A DIGIT

B DIGIT

ISSUE 5

CODE POINTS
2 DIGIT TRANSLATION

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SFD-10-01-E119

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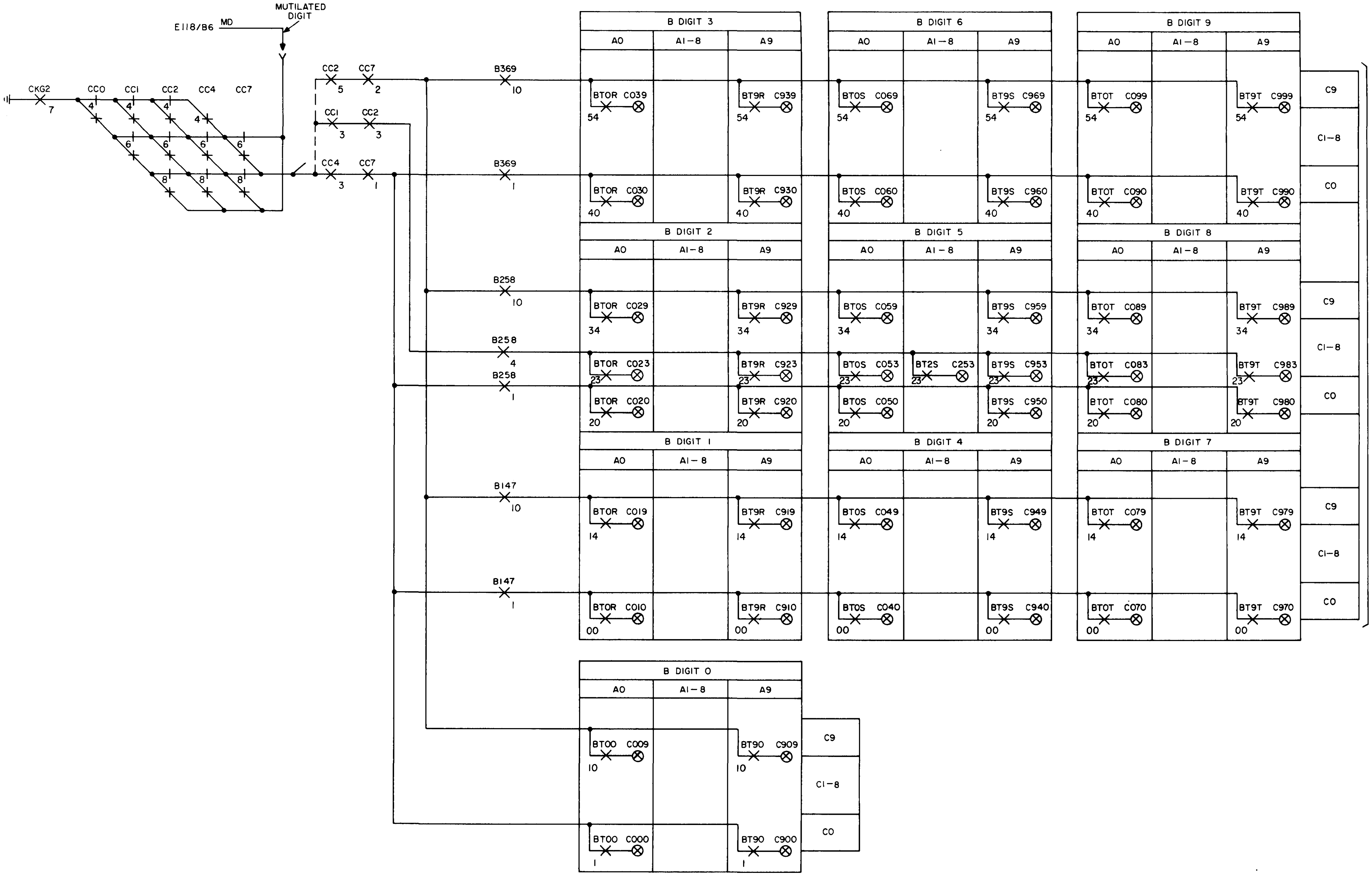
COMPLETING MARKER



SOME TYPICAL XCONN ARE SHOWN ON SHEETS E126 THRU E132

ISSUE
5

SFD-10-01-E120

CODE POINTS
3 DIGIT TRANSLATION

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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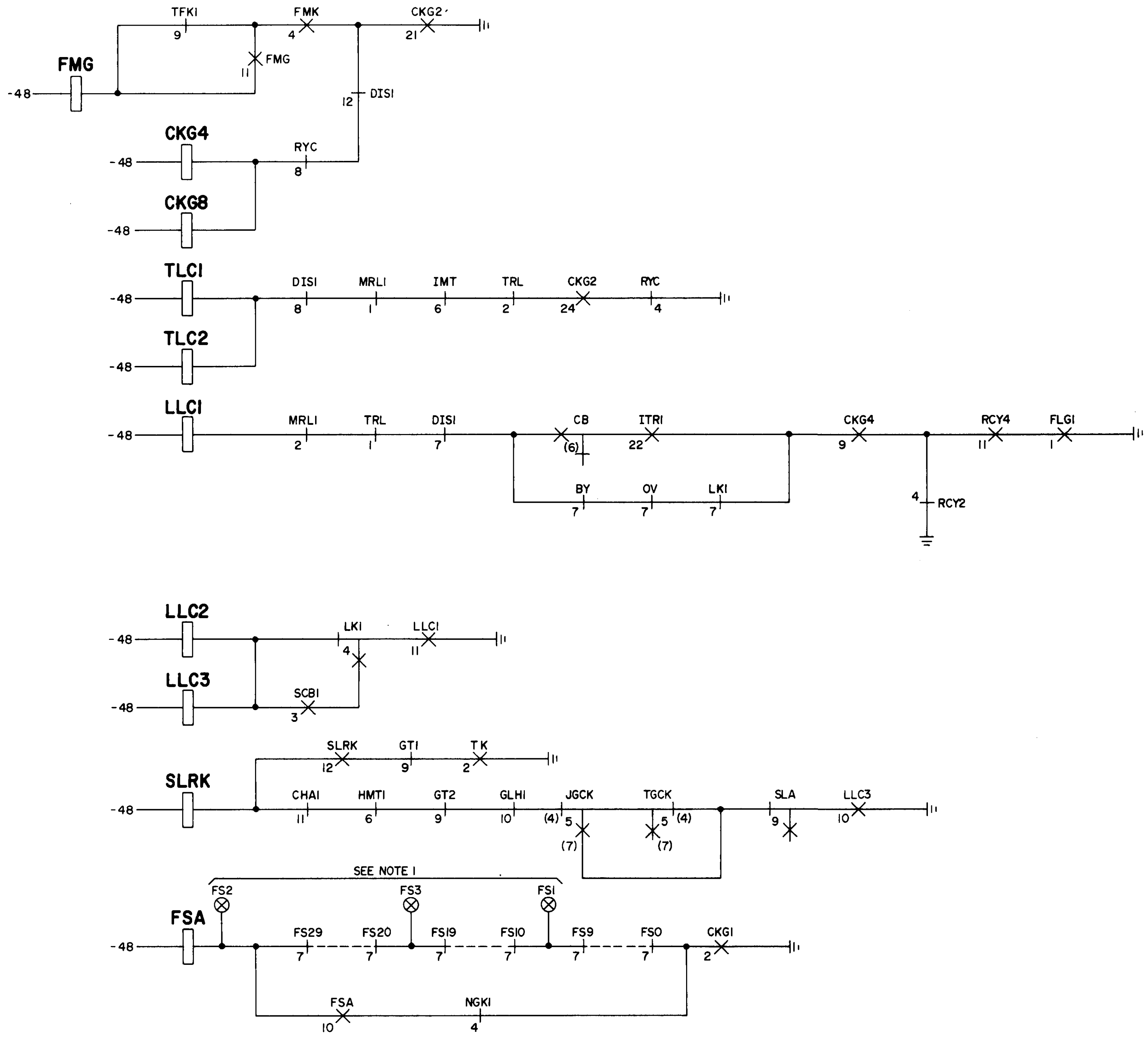
E-7481-L (4-73)

COMPLETING MARKER



SHEET NOTES:

1.

SIZE	CONNECT	TO
MAX OF 10 TL	FS1	FS2
FROM 11 TO 20 TL	FS2	FS3
OVER 20	NONE	

ISSUE
5

CHECK GROUND, TL AND LL CONTROL,
AND
SLEEVE RELEASE CHECK

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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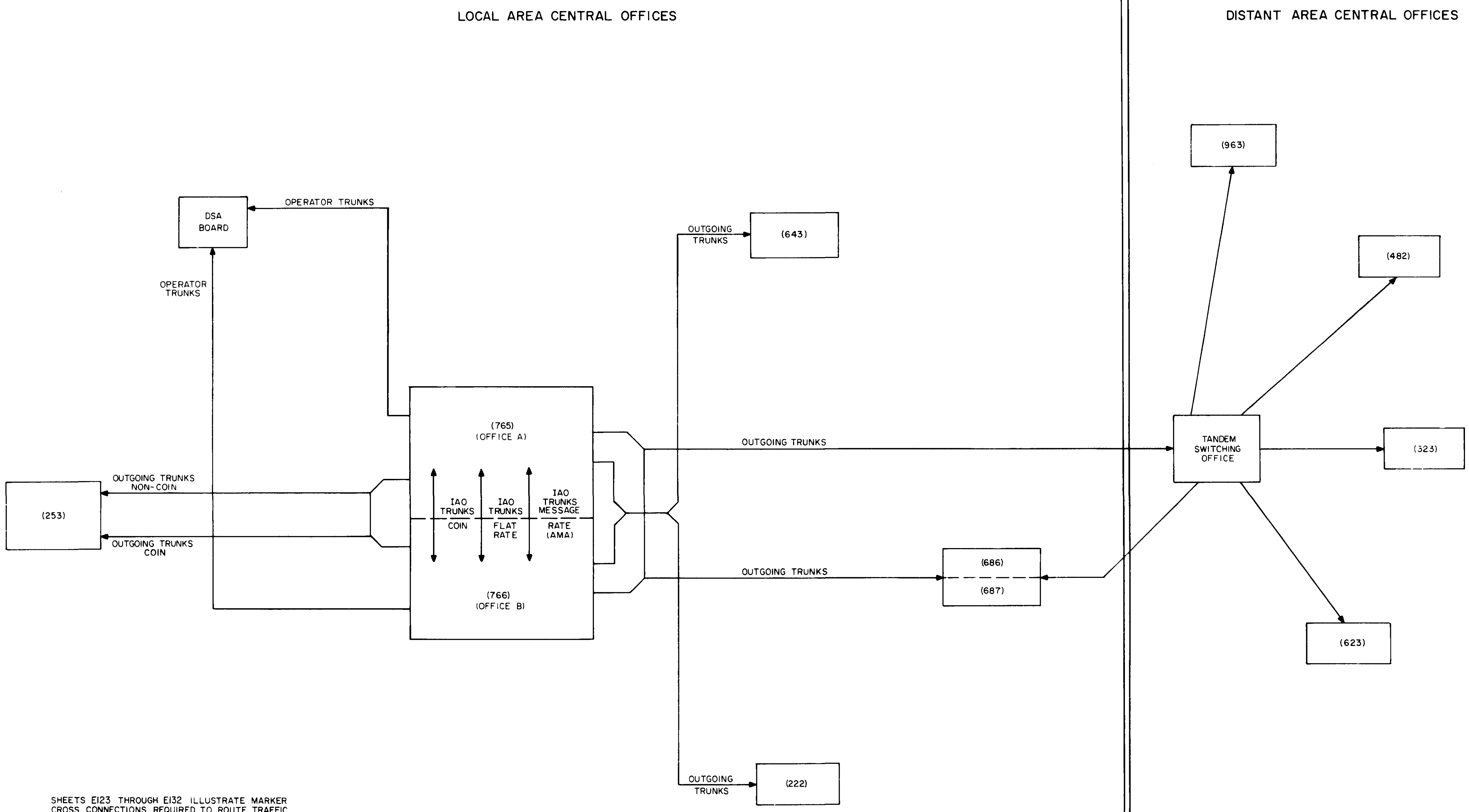
SFD-10-01-E121



SHEETS E123 THROUGH E132 ILLUSTRATE MARKER CROSS CONNECTIONS REQUIRED TO ROUTE TRAFFIC VIA THE TYPICAL ROUTES SHOWN ON THIS PAGE

ISSUE
5

SFD-10-01-E122

TYPICAL ROUTING
OF CALLS

PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

MARKER CROSS-CONNECTIONS
CLASS OF SERVICE
NO. 5 CROSSBAR

OFFICE____________
MARKER GROUP__________
SHEET____________

							(765)								(766)										
CLASS OF SERVICE							PBXF	1F	2F	4F	PBXMR	1MR	2MR	COIN	PBXF	1F	2F	4F	PBXMR	1MR	2MR	COIN	TAN	TOLL	REMARKS
ASSIGNMENT			SERVICE RELAY NO.			SORT-1	00	01	02	03	04	05	06	07	20	21	22	23	24	25	26	27	08	09	
							CROSS-CONNECT																		
			PCHG	SC		FROM	TO																		
OPERATOR & RESTRICTED CODE			20	00	USC 0	S0	SG05	SG05	SG05	RC15	SG06	SG06	SG06	RC16	SG07	SG07	SG07	RC18	SG08	SG08	SG08	RC19	DR3	DR3	
LONG DISTANCE C-211			C-211	01	1	S1	SG02	SG02	SG02	SG02	SG02	SG02	SG02	RC01	SG04	SG04	SG04	SG04	SG04	SG04	SG04	RC03			NO X-CONN REQD FOR BLANK SPACES
SERVICE CODES X11			RGO	02	2	S2	SG03	SG03	SG03	SG03	SG03	SG03	SG03	NC	SG03	SG03	SG03	SG03	SG03	SG03	SG03	NC	DR3	DR3	
INTRA OFFICE			APR BPR	03	3	S3	SG00	SG00	SG00	SG00	SG01	SG01	SG01	RC20	SG00	SG00	SG00	SG00	SG01	SG01	SG01	RC20			NO X-CONN REQD FOR BLANK SPACES
REVERTIVE CALL			RV	04	4	S4	BL	BL	SG12	SG12	BL	BL	SG12	BL	BL	BL	SG12	SG12	BL	BL	SG12	BL			NO X-CONN REQD FOR BLANK SPACES
VACANT CODE			VC	05	5	S5	SG10	SG10	SG10	SG10	SG10	SG10	SG10	RC12	SG10	SG10	SG10	SG10	SG10	SG10	SG10	RC12	ROA	ROA	
COMB. TONE OVERFLOW			CV	06	6	S6	SG11	SG11	SG11	SG11	SG11	SG11	SG11	RC08	SG11	SG11	SG11	SG11	SG11	SG11	SG11	RC08			NO X-CONN REQD FOR BLANK SPACES
COIN SERVICE			SCG	07	7	S7								CNS								CNS			NO X-CONN REQD FOR BLANK SPACES
CLASS OF SERVICE PEG COUNT			CLC	08	8	S8	PCS0	PCS0	PCS0	PCS1	RCS2	RCS2	PCS2	PCS3	PCS4	PCS4	PCS4	PCS5	PCS6	PCS6	PCS6	PCS7			NO X-CONN REQD FOR BLANK SPACES
HEAVY TRAFFIC PBX			SCG	09	9	S9	HTR				HTR				HTR				HTR						NO X-CONN REQD FOR BLANK SPACES
RINGER TEST CODE			RGTA	10	10	S10	SG09	SG09	SG09	SG09	SG09	SG09	SG09	RC29	SG09	SG09	SG09	SG09	SG09	SG09	SG09	RC29	DR3	DR3	
PERMANENT SIGNAL			R06	11	11	S11	PP	PN	PN	PN	PP	PN	PN	PM	PP	PN	PN	PN	PP	PN	PN	PM			NO X-CONN REQD FOR BLANK SPACES
	(765)	(766)	SERVICE RELAY NO.			SORT-2	←	SEE NOTE 3 E125 28	→	29	←	30	→	31	←	36'	→	37	←	38	→	39	32	33	
CHARGE	1	1	C253	12	USC 0	S0		SG13		SG13		RC35		RC34		SG13		SG13		RC35		RC34	SG13	RC36	
CHARGE	1	2	R31	13	1	S1		NN		NN		MBS1		DR1		MBS2		DRO		MBS2		DR2	NN	TO	
CHARGE	2	1	R32	14	2	S2		MBS2		DRG		MBS2		DR2		NN		NN		MBS1		DR1	NN	TO	
CHARGE	9	9	R01	15	3	S3		MBS9		DRO		MBS9		DR2		MBS9		DRO		MBS9		DR2	DR3	TO	
CHARGE	0	0	R24	16	4	S4		MBS0		DRO		MBS0		DR2		MBS0		DRO		MBS0		DR2	DR3	DR3	
TRUNK CLASS SCREENING			USC5	17	5	S5		SG05		RC15		SG06		RC16		SG07		RC18		SC08		RC19	RCA	NN	
				18	6	S6																			
				19	7	S7																			
				20	8	S8																			
				21	9	S9																			

ROUTE RELAY ASSIGNMENTS

00 - 211 (765) NON-COIN
01 - 211 (765) COIN
02 - 211 (766) NON-COIN
03 - 211 (766) COIN
04 - TONE NON-COIN
05 - SPARE
06 - PERMANENT SIGNAL
07 - COMMON OVERFLOW
08 - TONE COIN
09 - SPARE
10 - IAO FR
11 - VACANT CODE NON-COIN
12 - VACANT CODE COIN
13 - COIN JUNCTORS
14 - DIAL "O" (765) PBX, IND, 2P-FR/MR
15 - DIAL "O" (765) 4F
16 - DIAL "O" (765) COIN
17 - DIAL "O" (766) PBX, IND, 2P-FR/MR
18 - DIAL "O" (766) 4F
19 - DIAL "O" (766) COIN
20 - IAO COIN
21 - IAO MR
22 - 811 BUSINESS OFFICE
23 - REVERTING CALL
24 - TANDEM CHARGE 0
25 - TANDEM CHARGE 9
26 - 411-INFORMATION
27 - 611-REPAIR SERVICE
28 - RINGER TEST NON-COIN
29 - RINGER TEST COIN
30 - (253) FLAT RATE
31 - (643)
32 - (222)
33 - (686),(687)
34 - (253) COIN
35 - (253) MR
36 - (253) TOLL

MISCELLANEOUS ASSIGNMENTS USED ON E126 TO E132

CG	XC TO	RG	XC TO	SG	XC TO	RAG	XC TC	DR	
0		0	SC02	00	RC10	0	LR	0	RESTRICTED 4F
1	RSTRCD CODES	1	SC15	01	RC21	1	PB	1	COIN JUNCTOR
2	RC25			02	RC03	2		2	RESTRICTED COIN
				03	NN	3		3	TOLL & TANDEM DENY ROUTE
				04	RC04	4			
				05	RC14				
				06	OS0				
				07	RC17				
				08	OS1				
				09	RC28				
				10	RC11				
				11	RC04				
				12	RC23				
				13	RC30				

ISSUE
5

CLASS OF SERVICE
AND
SCREENING RELAY CONNECTIONS

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

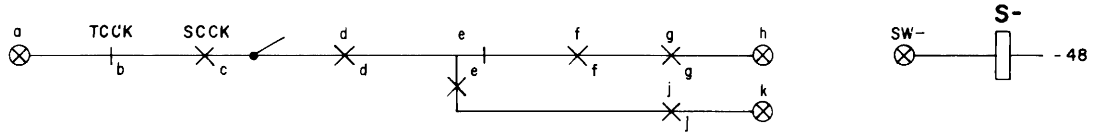
SFD-10-01-E123

PRINTED IN U. S. A.

E-7421 (10-71)

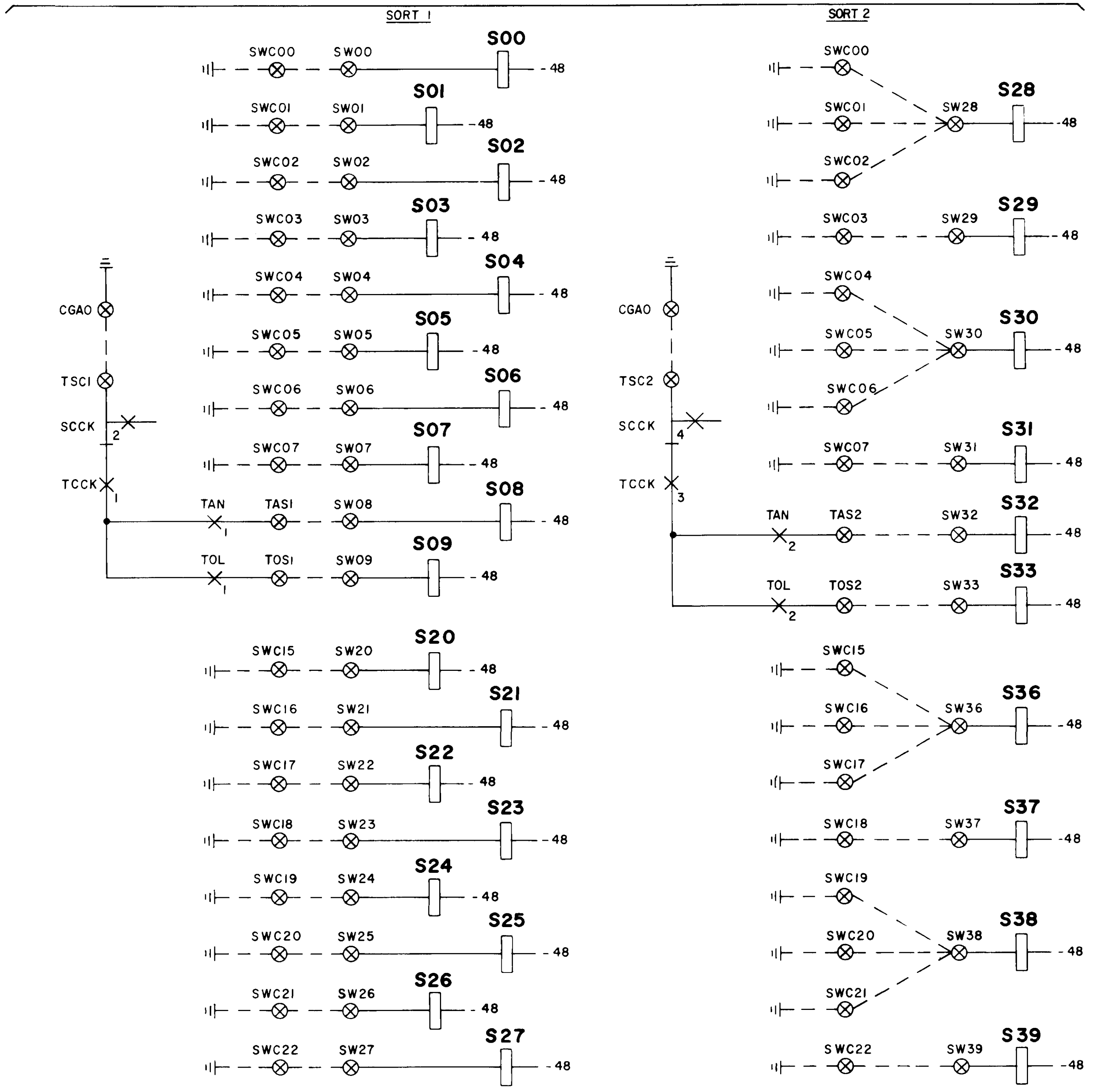
COMPLETING MARKER
CLASS OF SERVICE GROUPING

CROSS CONNECTION PROVISION FOR OFFICES ARRANGED FOR 30, 60, OR 100 CLASSES OF SERVICE



OFF. ARR FOR		CROSS CONNECT	a	b	c	d		e		f		g		h	j		k
			PCHG	CONT NO.	CONT NO.	REL	CONT NO.	REL	CONT NO.	REL	CONT NO.	REL	CONT NO.	PCHG	REL	CONT NO.	PCHG
100 CS	2 SORTS	CGA0	CSA1	2	1	CUA2	5	CUA4	4	CUA7	6	CTA0-4	10	SWC09-49	CTA0-4	7	SWC06-46
						CUA7		CUA0		CUA1			9	SWC08-48		8	SWC07-47
						CUA1		CUA2		CUA4			6	SWC05-45		4	SWC03-43
						CUA4		CUA7		CUA0			5	SWC04-44		1	SWC00-40
						CUA0		CUA1		CUA2			3	SWC02-42		2	SWC01-41
			CSA2	4	3	CUA2	8	CUA4	9	CUA7	7	CTA0-4	22	SWC09-49	CTA0-4	19	SWC06-46
						CUA7		CUA0		CUA1			21	SWC08-48		20	SWC07-47
						CUA1		CUA2		CUA4			18	SWC05-45		16	SWC03-43
						CUA4		CUA7		CUA0			17	SWC04-44		13	SWC00-40
						CUA0		CUA1		CUA2			15	SWC02-42		14	SWC01-41
	4 SORTS	CGB0	CSB1	7	6	SSU2	5	SSU4	4	SSU7	6	CTA5-9	10	SWC59-99	CTA5-9	7	SWC56-96
						SSU7		SSU0		SSU1			9	SWC58-98		8	SWC57-97
						SSU1		SSU2		SSU4			6	SWC55-95		4	SWC53-93
						SSU4		SSU7		SSU0			5	SWC54-94		1	SWC50-90
						SSU0		SSU1		SSU2			3	SWC52-92		2	SWC51-91
			CSB2	8	11	SSU2	8	SSU4	9	SSU7	7	CTA5-9	22	SWC59-99	CTA5-9	19	SWC56-96
						SSU7		SSU0		SSU1			21	SWC58-98		20	SWC57-97
						SSU1		SSU2		SSU4			18	SWC55-95		16	SWC53-93
						SSU4		SSU7		SSU0			17	SWC54-94		13	SWC50-90
						SSU0		SSU1		SSU2			15	SWC52-92		14	SWC51-91
30 CS	2 SORTS	CGA0	CSA1	2	1	CUA2	5	CUA4	4	CUA7	6	CTA0-2	10	SWC09-29	CTA0-2	7	SWC06-26
						CUA7		CUA0		CUA1			9	SWC08-28		8	SWC07-27
						CUA1		CUA2		CUA4			6	SWC05-25		4	SWC03-23
						CUA4		CUA7		CUA0			5	SWC04-24		1	SWC00-20
						CUA0		CUA1		CUA2			3	SWC02-22		2	SWC01-21
			CSA2	4	3	CUA2	8	CUA4	9	CUA7	7	CTA0-2	22	SWC09-29	CTA0-2	19	SWC06-26
						CUA7		CUA0		CUA1			21	SWC08-28		20	SWC07-27
						CUA1		CUA2		CUA4			18	SWC05-25		16	SWC03-23
						CUA4		CUA7		CUA0			17	SWC04-24		13	SWC00-20
						CUA0		CUA1		CUA2			15	SWC02-22		14	SWC01-21
	4 SORTS (SEE NOTE 2)	CGB0	CSB1	7	6	CUB2	5	CUB4	4	CUB7	6	CTB0-2	10	SWC09-29	CTB0-2	7	SWC06-26
						CUB7		CUB0		CUB1			9	SWC08-28		8	SWC07-27
						CUB1		CUB2		CUB4			6	SWC05-25		4	SWC03-23
						CUB4		CUB7		CUB0			5	SWC04-24		1	SWC00-20
						CUB0		CUB1		CUB2			3	SWC02-22		2	SWC01-21
			CSB2	8	11	CUB2	8	CUB4	9	CUB7	7	CTB0-2	22	SWC09-29	CTB0-2	19	SWC06-26
						CUB7		CUB0		CUB1			21	SWC08-28		20	SWC07-27
						CUB1		CUB2		CUB4			18	SWC05-25		16	SWC03-23
						CUB4		CUB7		CUB0			17	SWC04-24		13	SWC00-20
						CUB0		CUB1		CUB2			15	SWC02-22		14	SWC01-21
60 CS 2 SORTS (SEE NOTE 1)		CGA 1 CGA1	CSA1	2	1	CUA2	5	CUA4	4	CUA7	6	CTA0-2	10	SWC09-29	CTA0-2	7	SWC06-26
						CUA7		CUA0		CUA1			9	SWC08-28		8	SWC07-27
						CUA1		CUA2		CUA4			6	SWC05-25		4	SWC03-23
						CUA4		CUA7		CUA0			5	SWC04-24		1	SWC00-20
						CUA0		CUA1		CUA2			3	SWC02-22		2	SWC01-21
		CGA 2 CGA2	CSA2	4	3	CUA2	8	CUA4	9	CUA7	7	CTA0-2	22	SWC09-29	CTA0-2	19	SWC06-26
						CUA7		CUA0		CUA1			21	SWC08-28		20	SWC07-27
						CUA1		CUA2		CUA4			18	SWC05-25		16	SWC03-23
						CUA4		CUA7		CUA0			17	SWC04-24		13	SWC00-20
						CUA0		CUA1		CUA2			15	SWC02-22		14	SWC01-21
		CGB 1 CGB1	CSB1	7	6	CUB2	5	CUB4	4	CUB7	6	CTB0-2	10	SWC09-29	CTB0-2	7	SWC06-26
						CUB7		CUB0		CUB1			9	SWC08-28		8	SWC07-27
						CUB1		CUB2		CUB4			6	SWC05-25		4	SWC03-23
						CUB4		CUB7		CUB0			5	SWC04-24		1	SWC00-20
						CUB0		CUB1		CUB2			3	SWC02-22		2	SWC01-21
		CGB 2 CGB2	CSB2	8	11	CUB2	8	CUB4	9	CUB7	7	CTB0-2	22	SWC09-29	CTB0-2	19	SWC06-26
						CUB7		CUB0		CUB1			21	SWC08-28		20	SWC07-27
						CUB1		CUB2		CUB4			18	SWC05-25		16	SWC03-23
						CUB4		CUB7		CUB0			17	SWC04-24		13	SWC00-20
						CUB0		CUB1		CUB2			15	SWC02-22		14	SWC01-21

TYPICAL CROSS CONNECTION PER TABLE ON E123 AND E125



SHEET NOTES:

1. INCREASING 30 CLASSES OF SERVICE TO 60 CLASSES OF SERVICE WITH TWO SORTS IS DONE ON AN (A&M) BASIS.
2. INCREASING THE NUMBER OF SORTS TO FOUR FOR 30 CLASSES OF SERVICE IS DONE ON AN (A&M) BASIS.

ISSUE
5

SFD-10-01-E124

CLASS OF SERVICE
AND
SCREENING RELAYS CONNECTIONS

DWG SIZE 6S

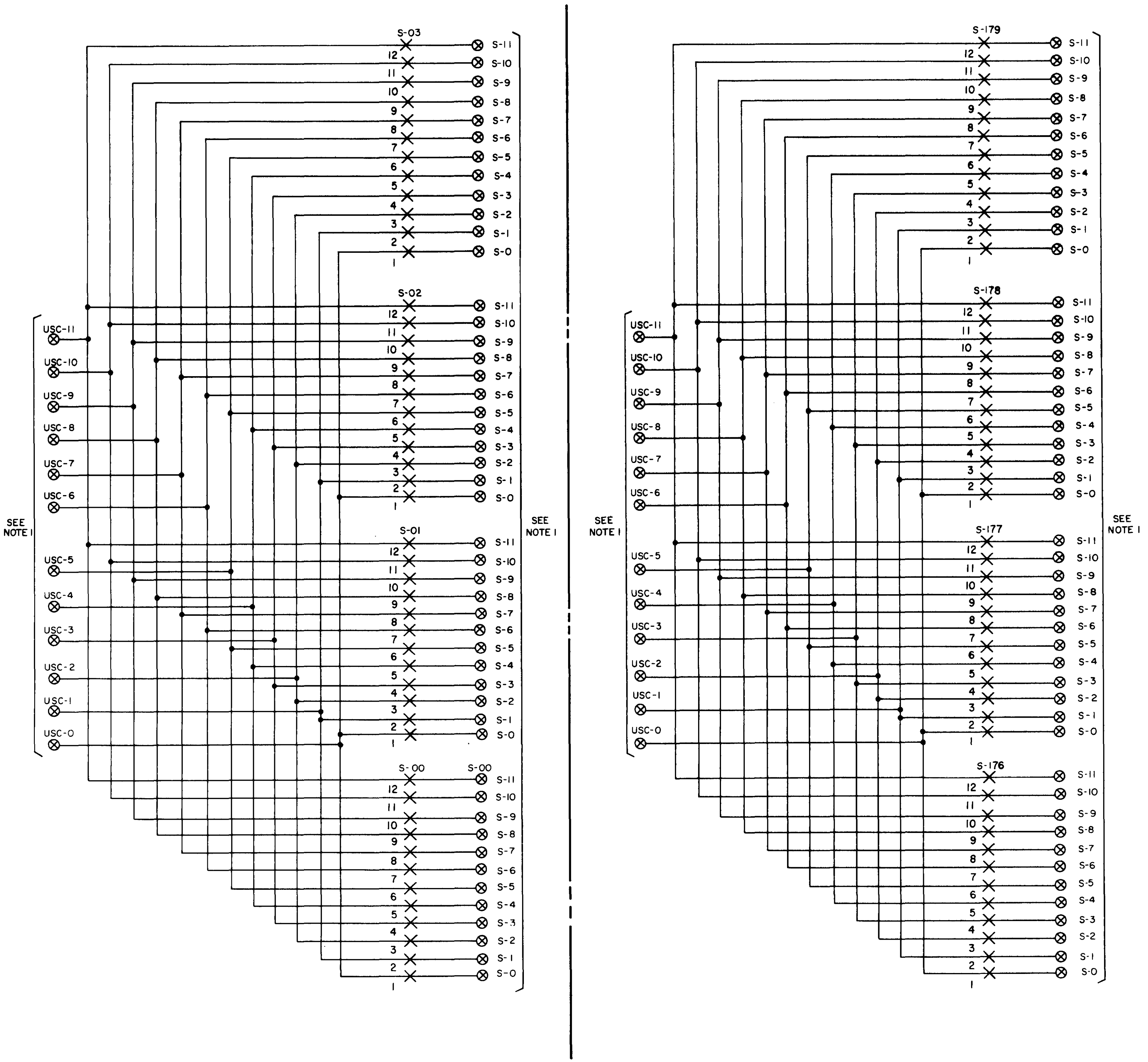
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7481-L (4-73)

COMPLETING MARKER

180 S- RELAYS WIRED IN MULTIPLE GROUPS OF 4 RELAYS TO A GROUP SCREENING RELAYS S-00 TO S-03 AND S-176 TO S-179 ARE SHOWN. OTHER GROUPS ARE MULTIPLED IN THE SAME WAY.



MULTIPLE OF S-RELAY CONTACTS

S-RELAYS	S-RELAYS	S-RELAYS	S-RELAYS	S-RELAYS
0-3	40-43	80-83	120-123	160-163
4-7	44-47	84-87	124-127	164-167
8-11	48-51	88-91	128-131	168-171
12-15	52-55	92-95	132-135	172-175
16-19	56-59	96-99	136-139	176-179
20-23	60-63	100-103	140-143	
24-27	64-67	104-107	144-147	
28-31	68-71	108-111	148-151	
32-35	72-75	112-115	152-155	
36-39	76-79	116-119	156-159	

S0-59 - LOCATED ON TRANSLATOR & CODE TREATMENT FR

S60-119 - LOCATED ON SUPPLEMENTARY SRV TREATMENT FR

S120-179 - LOCATED ON AUX SUPPLEMENTARY SRV TREATMENT FR

TYPICAL CLASS OF SERVICE TO S-RELAY ASSIGNMENTS
TWO CENTRAL OFFICES - 765 & 766

CS NO.	CLASS OF SERVICE		S-RELAY SW NO.	CROSS-CONNECT SW-	TO SWCA-	SC GR
00	765	PBXF	00	SORT-1	SWC- 0	0-11
01	765	1F	01	SORT-1	SWC- 1	0-11
02	765	2F	02	SORT-1	SWC- 2	0-11
03	765	4F	03	SORT-1	SWC- 3	0-11
04	765	PBXMR	04	SORT-1	SWC- 4	0-11
05	765	1MR	05	SORT-1	SWC- 5	0-11
06	765	2MR	06	SORT-1	SWC- 6	0-11
07	765	CN	07	SORT-1	SWC- 7	0-11
08	TANDEM		08	SORT-1	TA- 1	0-11
09	TOLL		09	SORT-1	TO- 1	0-11
15	766	PBXF	20	SORT-1	SWC-15	0-11
16	766	1F	21	SORT-1	SWC-16	0-11
17	766	2F	22	SORT-1	SWC-17	0-11
18	766	4F	23	SORT-1	SWC-18	0-11
19	766	PBXMR	24	SORT-1	SWC-19	0-11
20	766	1MR	25	SORT-1	SWC-20	0-11
21	766	2MR	26	SORT-1	SWC-21	0-11
22	766	CN	27	SORT-1	SWC-22	0-11
	765	00-02	28	SORT-2	SWC- 0-2	12-23
	765	03	29	SORT-2	SWC- 3	12-23
	765	04-06	30	SORT-2	SWC- 4-6	12-23
	765	07	31	SORT-2	SWC- 7	12-23
	765	08	32	SORT-2	TA- 2	12-23
	765	09	33	SORT-2	TO- 2	12-23
	766	15-17	36	SORT-2	SWC-15-17	12-23
	766	18	37	SORT-2	SWC-18	12-23
	766	19-21	38	SORT-2	SWC-19-21	12-23
	766	22	39	SORT-2	SWC-22	12-23

SEE NOTE 2

SHEET NOTES:

1. FOR CROSS-CONNECTIONS TO S- AND USC- PUNCHINGS SEE E126 TO E132.
2. IN SORT 2, THOSE CLASSES OF SERVICE WHICH RECEIVE THE SAME ROUTE SERIES TREATMENT ARE GROUPED. FOR EXAMPLE: 765 PBXF, 1F, 2F ALL USE S-28 SCREENING RELAY IN SORT 2.
3. RELAY S28 SERVES 765 CLASSES PBXF. 1F, 2F. RELAYS S30, S36, S38 ALSO SERVE THREE CLASSES EACH.
4. CROSS-CONNECT CSA1 TO CGA1 AND CSA2 TO CGA2 WHEN SIXTY CLASSES OF SERVICE ARE PROVIDED. FOR THIRTY CLASSES OF SERVICE, CROSS-CONNECT CSA1 TO CGA0 AND CSA2 TO CGA0.

ISSUE
5

CLASS OF SERVICE
AND
SCREENING RELAY CONNECTIONS

SFD-10-01-E125

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

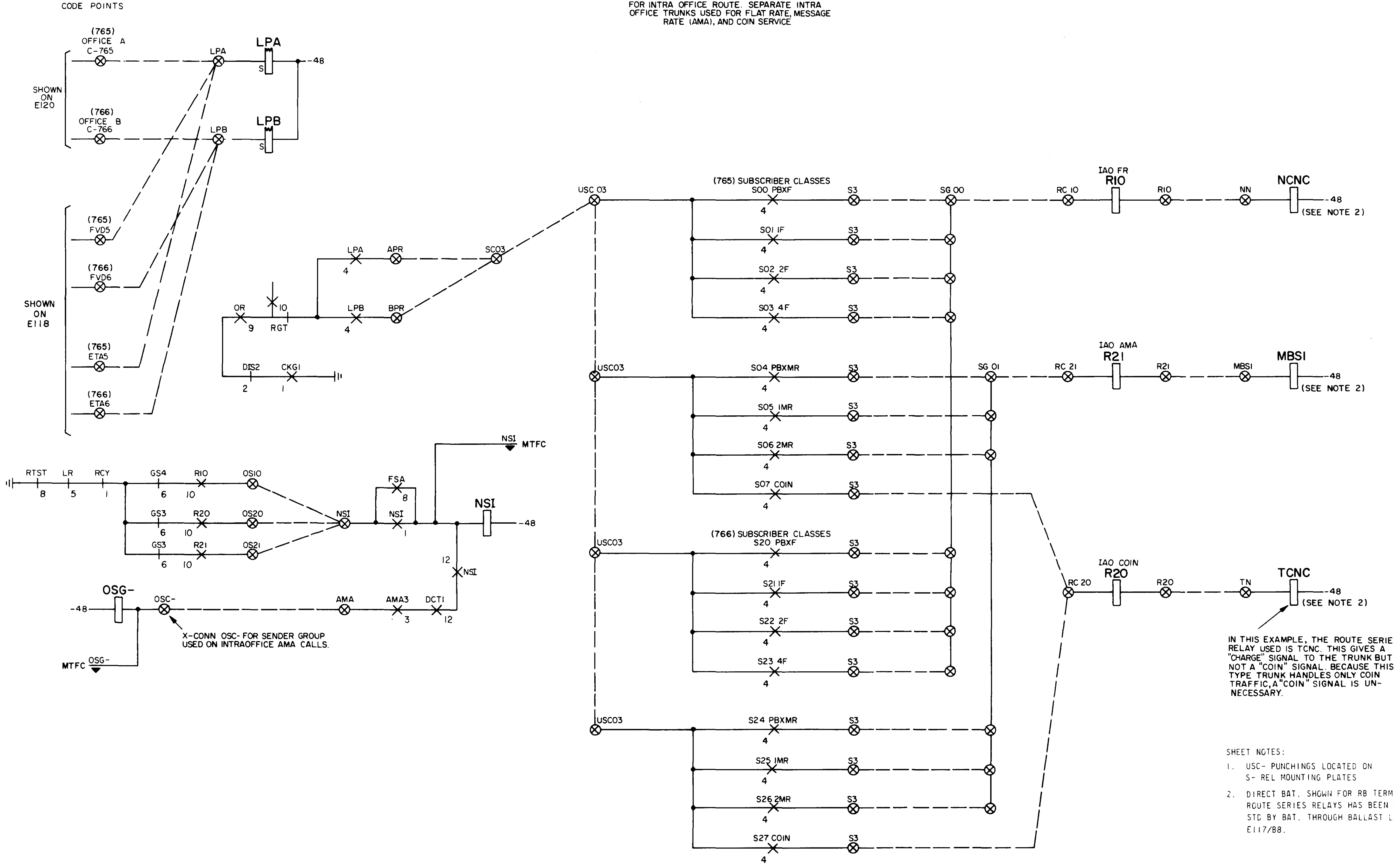
PRINTED IN U. S. A.

SFD-10-01-E125

E-7421 (10-71)

COMPLETING MARKER

TYPICAL ROUTE RELAY CROSS CONNECTIONS FOR INTRA OFFICE ROUTE. SEPARATE INTRA OFFICE TRUNKS USED FOR FLAT RATE, MESSAGE RATE (AMA), AND COIN SERVICE



IN THIS EXAMPLE, THE ROUTE SERIES RELAY USED IS TCNC. THIS GIVES A "CHARGE" SIGNAL TO THE TRUNK BUT NOT A "COIN" SIGNAL. BECAUSE THIS TYPE TRUNK HANDLES ONLY COIN TRAFFIC, A "COIN" SIGNAL IS UNNECESSARY.

SHEET NOTES:

1. USC- PUNCHINGS LOCATED ON S- REL MOUNTING PLATES
2. DIRECT BAT. SHOWN FOR RB TERM. AND FOR ROUTE SERIES RELAYS HAS BEEN REPLACED AS STD BY BAT. THROUGH BALLAST LAMPS-SEE E117/B8.

ISSUE
5

SFD-10-01-E126

TYPICAL ROUTE, ROUTE RELAY
AND ROUTE SERIES RELAY
CROSS CONNECTIONS

DWG SIZE 6S

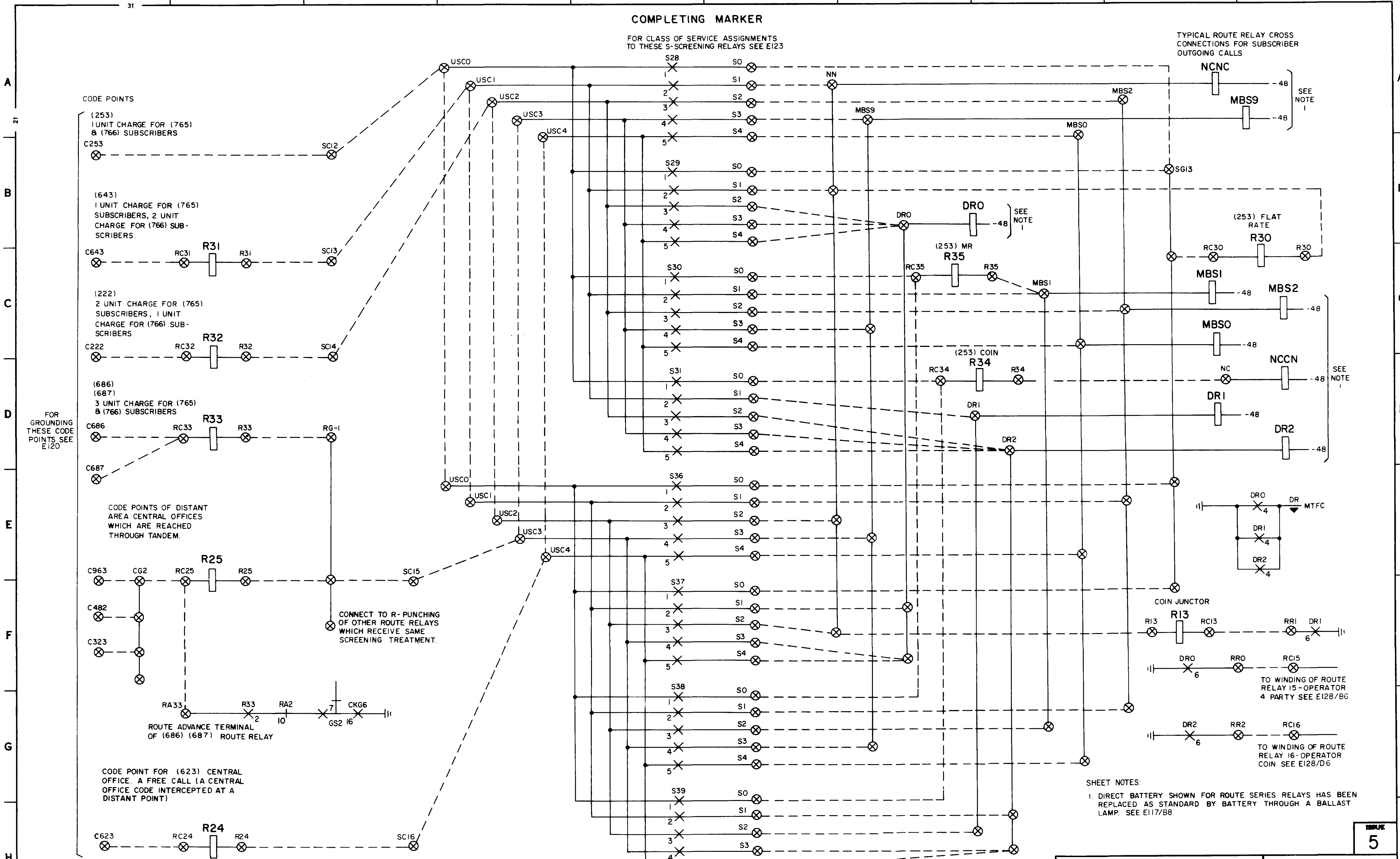
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

E-7481-L (4-73)

SFD-10-01-E126

COMPLETING MARKER



FOR CLASS OF SERVICE ASSIGNMENTS TO THESE S-SCREENING RELAYS SEE E123
TYPICAL ROUTE RELAY CROSS CONNECTIONS FOR SUBSCRIBER OUTGOING CALLS
CODE POINTS
(253) 1 UNIT CHARGE FOR (765) & (766) SUBSCRIBERS
C253
SC12
(643) 1 UNIT CHARGE FOR (765) SUBSCRIBERS, 2 UNIT CHARGE FOR (766) SUBSCRIBERS
C643
RC31
R31
SC13
(222) 2 UNIT CHARGE FOR (765) SUBSCRIBERS, 1 UNIT CHARGE FOR (766) SUBSCRIBERS
C222
RC32
R32
SC14
(686) (687) 3 UNIT CHARGE FOR (765) & (766) SUBSCRIBERS
C686
C687
RC33
R33
RG-1
FOR GROUNDING THESE CODE POINTS SEE E120
CODE POINTS OF DISTANT AREA CENTRAL OFFICES WHICH ARE REACHED THROUGH TANDEM.
C963
C482
C323
CG2
RC25
R25
SC15
CONNECT TO R-PUNCHING OF OTHER ROUTE RELAYS WHICH RECEIVE SAME SCREENING TREATMENT.
RA33
RA2
GS2
CKG6
ROUTE ADVANCE TERMINAL OF (686) (687) ROUTE RELAY
CODE POINT FOR (623) CENTRAL OFFICE. A FREE CALL (A CENTRAL OFFICE CODE INTERCEPTED AT A DISTANT POINT)
C623
RC24
R24
SC16
USC0
USC1
USC2
USC3
USC4
S28
S29
S30
S31
S36
S37
S38
S39
S0
S1
S2
S3
S4
NN
MBS9
MBS2
MBS0
SG13
NCNC
MBS9
-48
SEE NOTE 1
DR0
SEE NOTE 1
(253) FLAT RATE
RC30
R30
(253) MR
RC35
R35
MBS1
MBS2
MBS0
(253) COIN
RC34
R34
NC
NCCN
SEE NOTE 1
DR1
DR2
MTFC
DR
COIN JUNCTOR
R13
RC13
RR1
RR0
RC15
TO WINDING OF ROUTE RELAY 15-OPERATOR 4 PARTY SEE E128/B6
RR2
RC16
TO WINDING OF ROUTE RELAY 16-OPERATOR COIN SEE E128/D6

SHEET NOTES:

1. DIRECT BATTERY SHOWN FOR ROUTE SERIES RELAYS HAS BEEN REPLACED AS STANDARD BY BATTERY THROUGH A BALLAST LAMP. SEE E117/B8

ISSUE
5

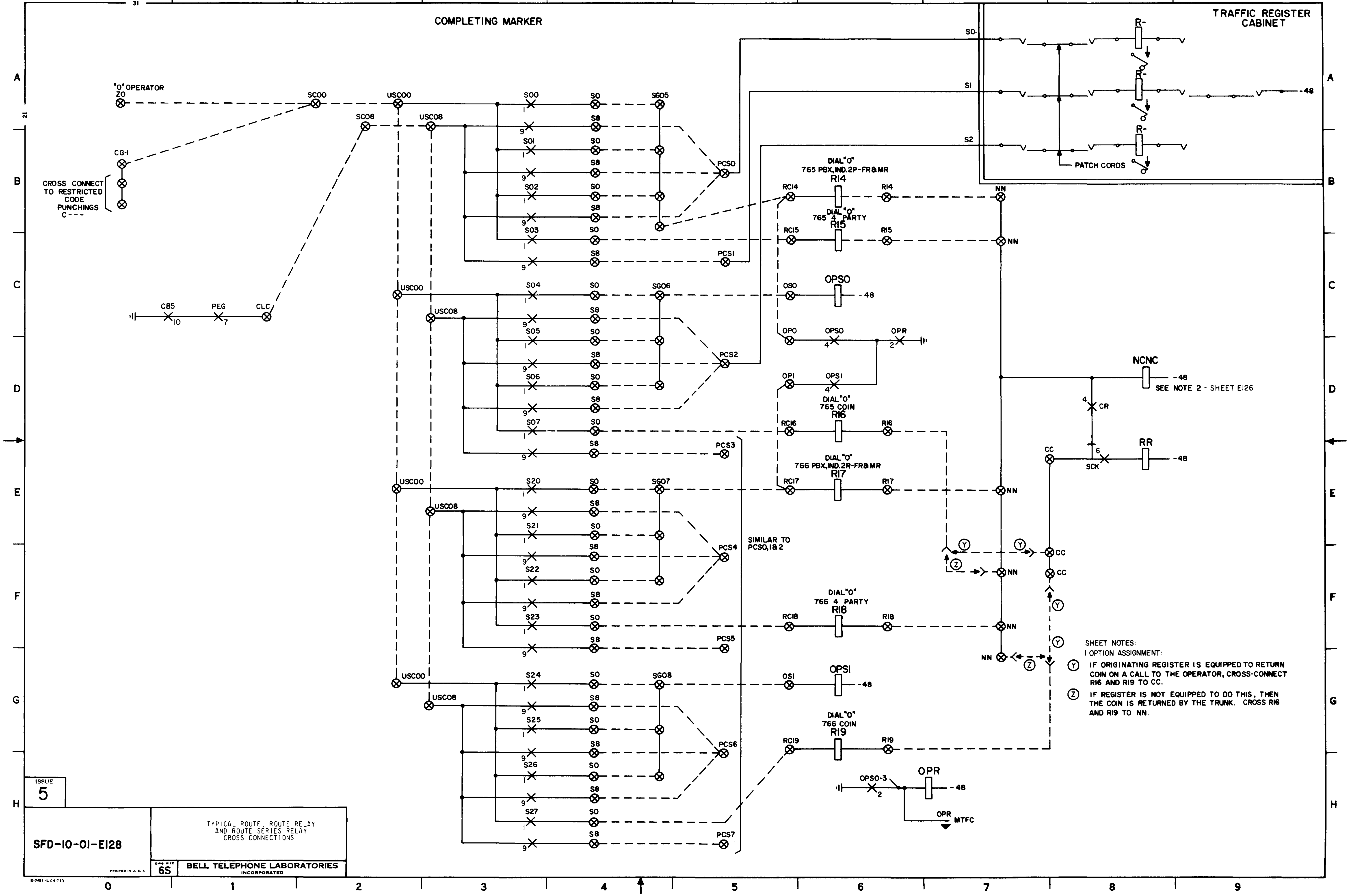
TYPICAL ROUTE, ROUTE RELAY
AND ROUTE SERIES RELAY
CROSS CONNECTIONS

SFD-10-01-E127

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U. S. A.



SHEET NOTES:

1 OPTION ASSIGNMENT:

Ⓨ IF ORIGINATING REGISTER IS EQUIPPED TO RETURN COIN ON A CALL TO THE OPERATOR, CROSS-CONNECT RI6 AND RI9 TO CC.

Ⓩ IF REGISTER IS NOT EQUIPPED TO DO THIS, THEN THE COIN IS RETURNED BY THE TRUNK. CROSS RI6 AND RI9 TO NN.

ISSUE
5

SFD-10-01-E128

TYPICAL ROUTE, ROUTE RELAY
AND ROUTE SERIES RELAY
CROSS CONNECTIONS

DWG SIZE 6S

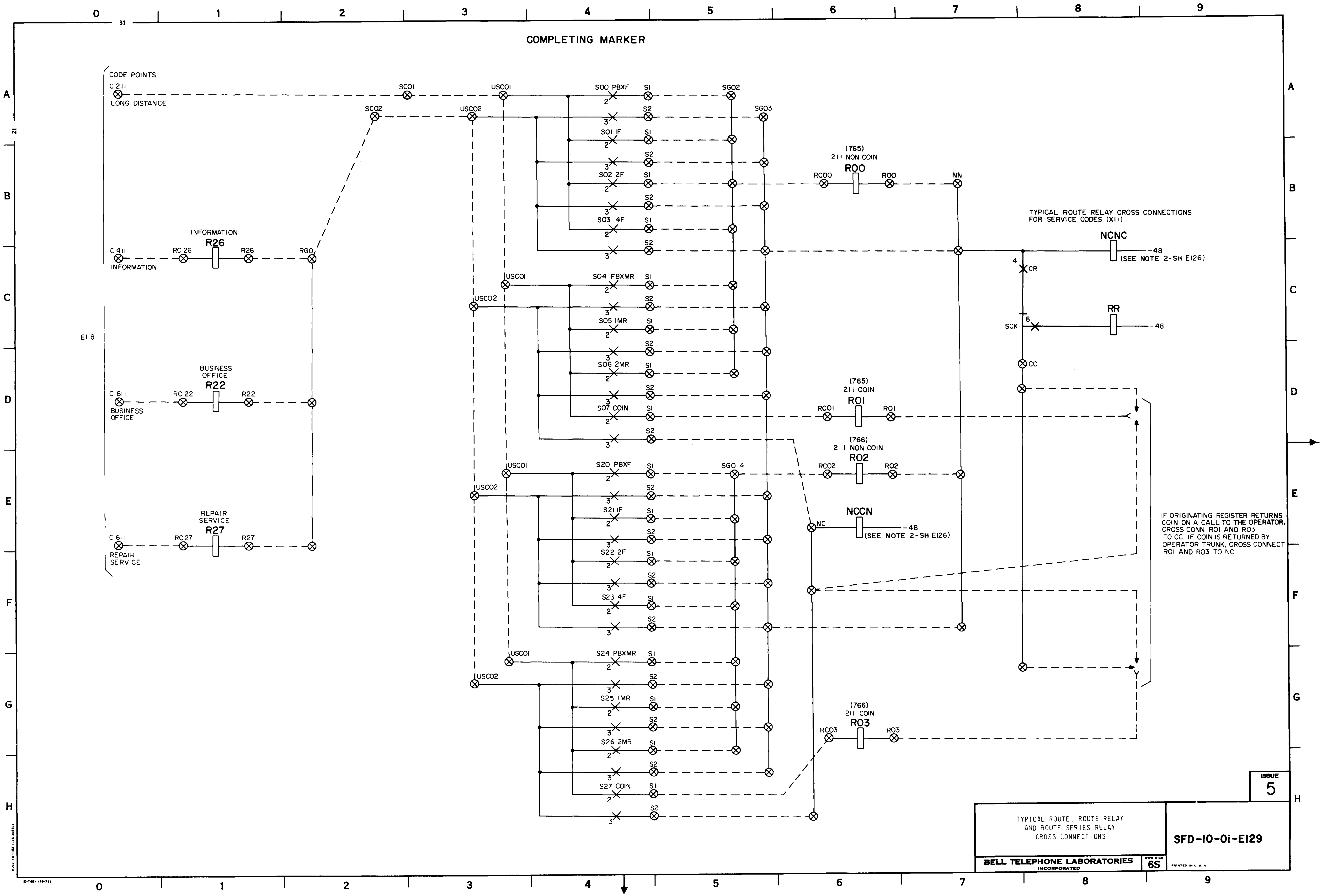
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7481-L (4-73)

SFD-10-01-E128

COMPLETING MARKER



TYPICAL ROUTE RELAY CROSS CONNECTIONS FOR SERVICE CODES (X11)

IF ORIGINATING REGISTER RETURNS COIN ON A CALL TO THE OPERATOR, CROSS CONN RO1 AND RO3 TO CC. IF COIN IS RETURNED BY OPERATOR TRUNK, CROSS CONNECT RO1 AND RO3 TO NC.

TYPICAL ROUTE, ROUTE RELAY
AND ROUTE SERIES RELAY
CROSS CONNECTIONS

SFD-10-01-E129

ISSUE 5

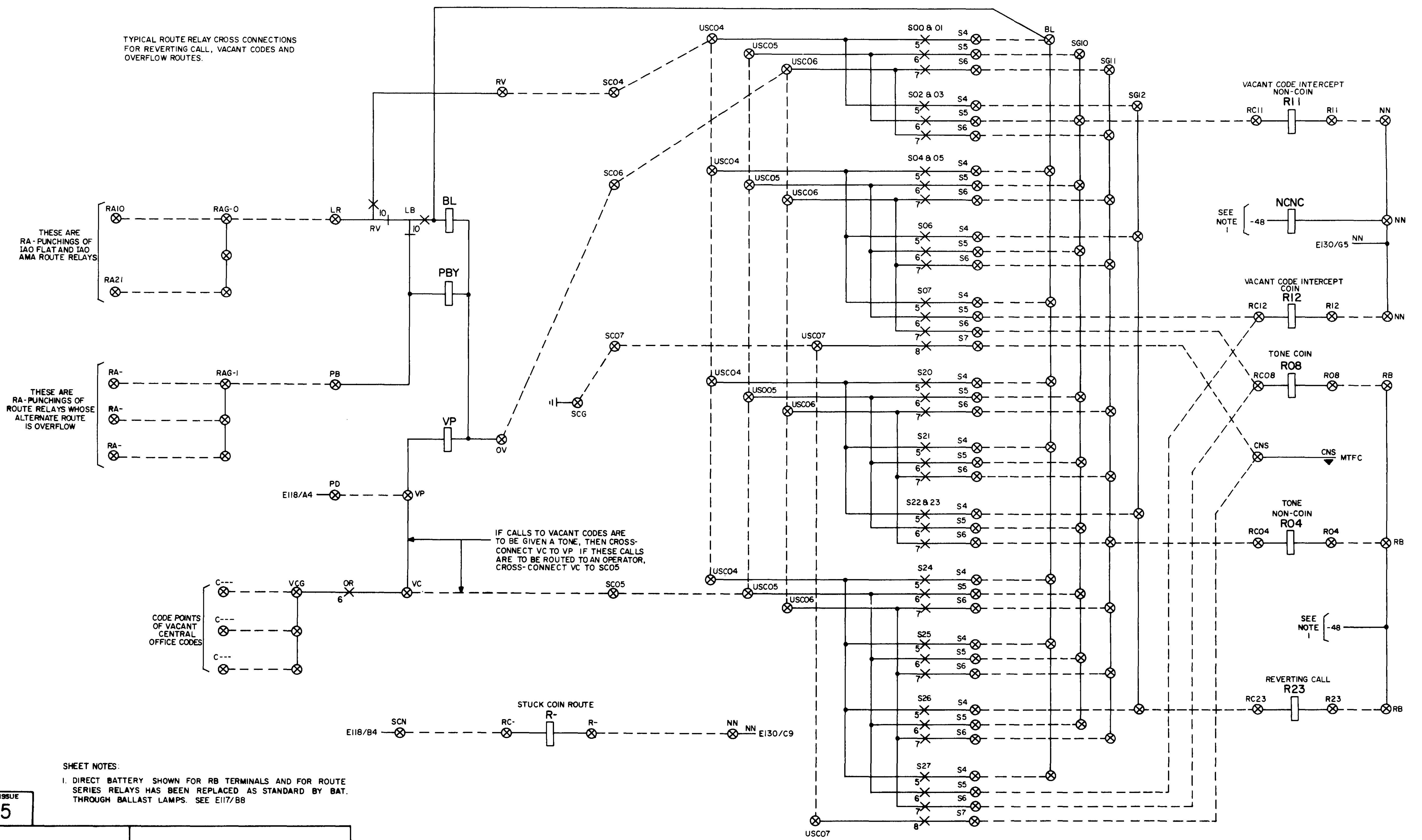
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U. S. A.

SFD-10-01-E129

COMPLETING MARKER


TYPICAL ROUTE RELAY CROSS CONNECTIONS FOR REVERTING CALL, VACANT CODES AND OVERFLOW ROUTES.
THESE ARE RA-PUNCHINGS OF IAO FLAT AND IAO AMA ROUTE RELAYS
RAIO
RAG-O
RA21
LR
RV
LB
10
BL
PBY
THESE ARE RA-PUNCHINGS OF ROUTE RELAYS WHOSE ALTERNATE ROUTE IS OVERFLOW
RA-
RAG-1
PB
VP
OV
E118/A4
PD
IF CALLS TO VACANT CODES ARE TO BE GIVEN A TONE, THEN CROSS-CONNECT VC TO VP. IF THESE CALLS ARE TO BE ROUTED TO AN OPERATOR, CROSS-CONNECT VC TO SC05
CODE POINTS OF VACANT CENTRAL OFFICE CODES
C---
VCG
OR
6
VC
SC05
SC04
SC06
SC07
SCG
STUCK COIN ROUTE
E118/B4
SCN
RC-
R-
NN
E130/C9
USC04
USC05
USC06
USC07
S00 & 01
S02 & 03
S04 & 05
S06
S07
S20
S21
S22 & 23
S24
S25
S26
S27
S4
S5
S6
S7
BL
SG10
SG11
SG12
VACANT CODE INTERCEPT NON-COIN
R11
RC11
NN
SEE NOTE 1
-48
NCNC
E130/G5
VACANT CODE INTERCEPT COIN
R12
RC12
TONE COIN
R08
RC08
RB
CNS
MTFC
TONE NON-COIN
R04
RC04
REVERTING CALL
R23
RC23

SHEET NOTES:

1. DIRECT BATTERY SHOWN FOR RB TERMINALS AND FOR ROUTE SERIES RELAYS HAS BEEN REPLACED AS STANDARD BY BAT. THROUGH BALLAST LAMPS. SEE E117/B8

ISSUE
5

SFD-10-01-E130

TYPICAL ROUTE, ROUTE RELAY
AND ROUTE SERIES RELAY
CROSS CONNECTIONS

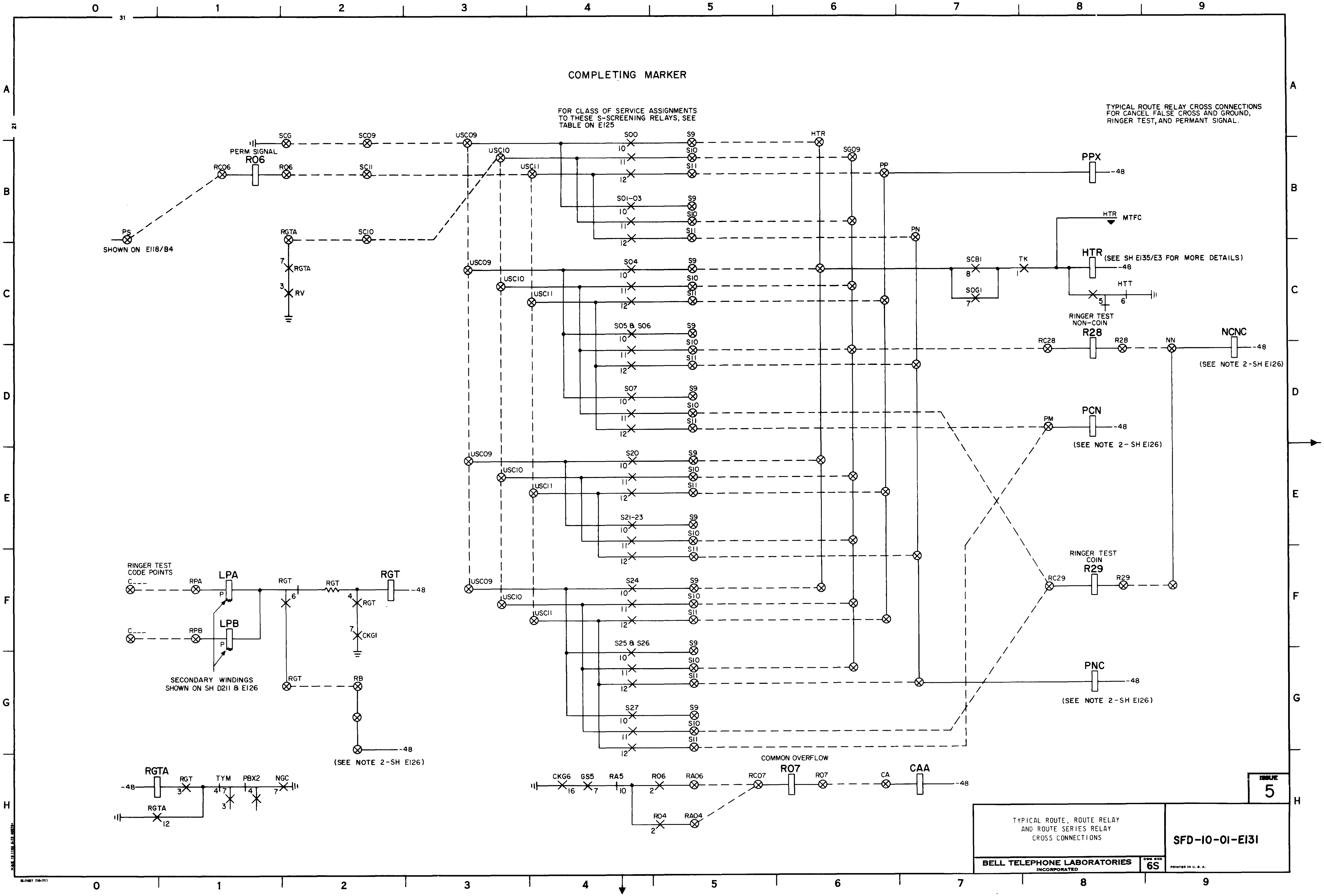
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-E130

COMPLETING MARKER



ISSUE 5

TYPICAL ROUTE, ROUTE RELAY
AND ROUTE SERIES RELAY
CROSS CONNECTIONS

SFD-10-01-E131

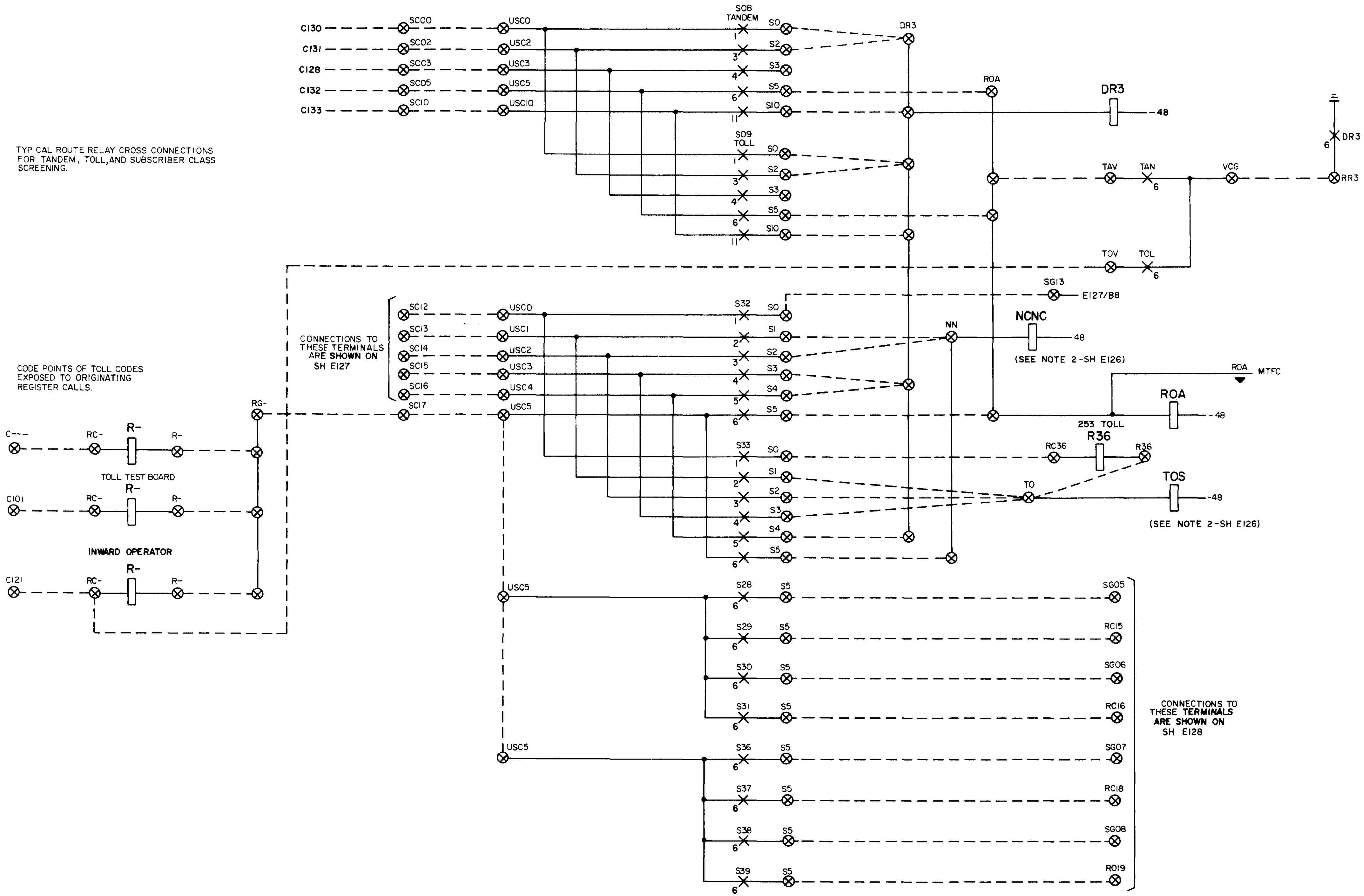
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U. S. A.

SFD-10-01-E131

COMPLETING MARKER



TYPICAL ROUTE RELAY CROSS CONNECTIONS FOR TANDEM, TOLL, AND SUBSCRIBER CLASS SCREENING.

CODE POINTS OF TOLL CODES EXPOSED TO ORIGINATING REGISTER CALLS.

ISSUE
5

SFD-10-01-E132

TYPICAL ROUTE, ROUTE RELAY
AND ROUTE SERIES RELAY
CROSS CONNECTIONS

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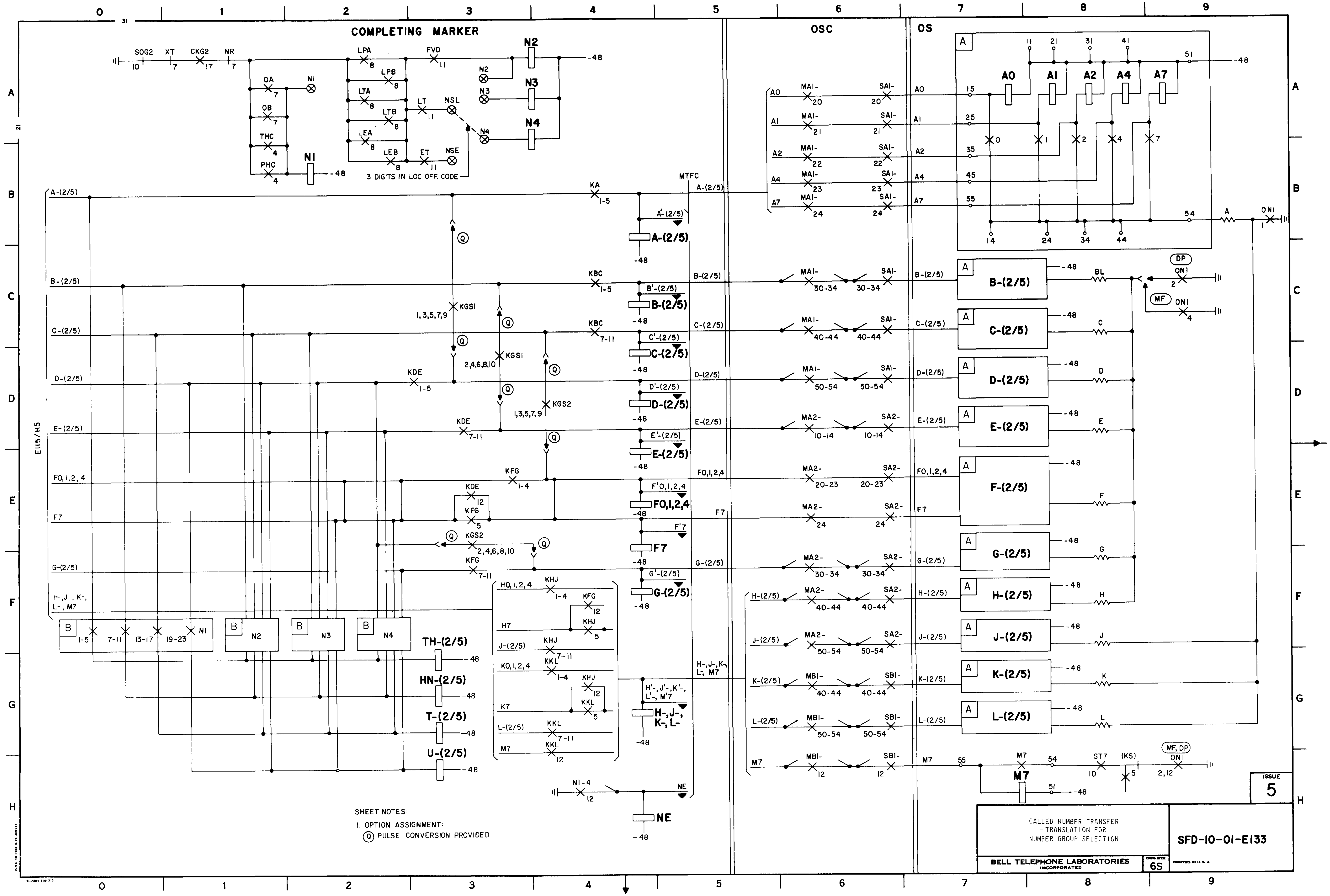
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-E132



SHEET NOTES:

1. OPTION ASSIGNMENT:
Ⓠ PULSE CONVERSION PROVIDED

ISSUE
5

CALLED NUMBER TRANSFER
- TRANSLATION FOR
NUMBER GROUP SELECTION

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BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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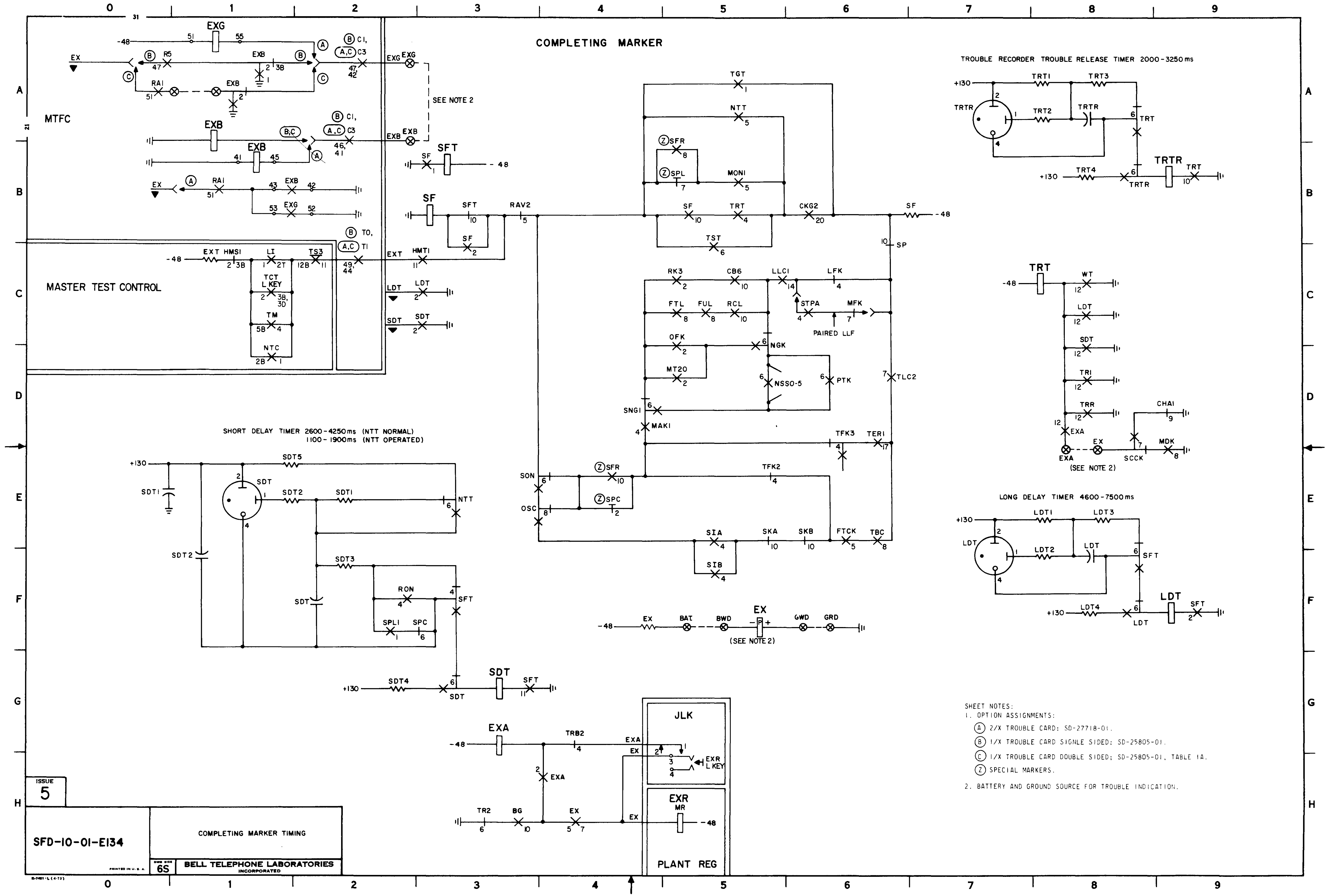
SFD-10-01-E133



SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD: SD-27718-01.
Ⓑ 1/X TROUBLE CARD SIGNLE SIDED: SD-25805-01.
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED: SD-25805-01, TABLE 1A.
Ⓩ SPECIAL MARKERS.
2. BATTERY AND GROUND SOURCE FOR TROUBLE INDICATION.

ISSUE
5

SFD-10-01-E134

COMPLETING MARKER TIMING

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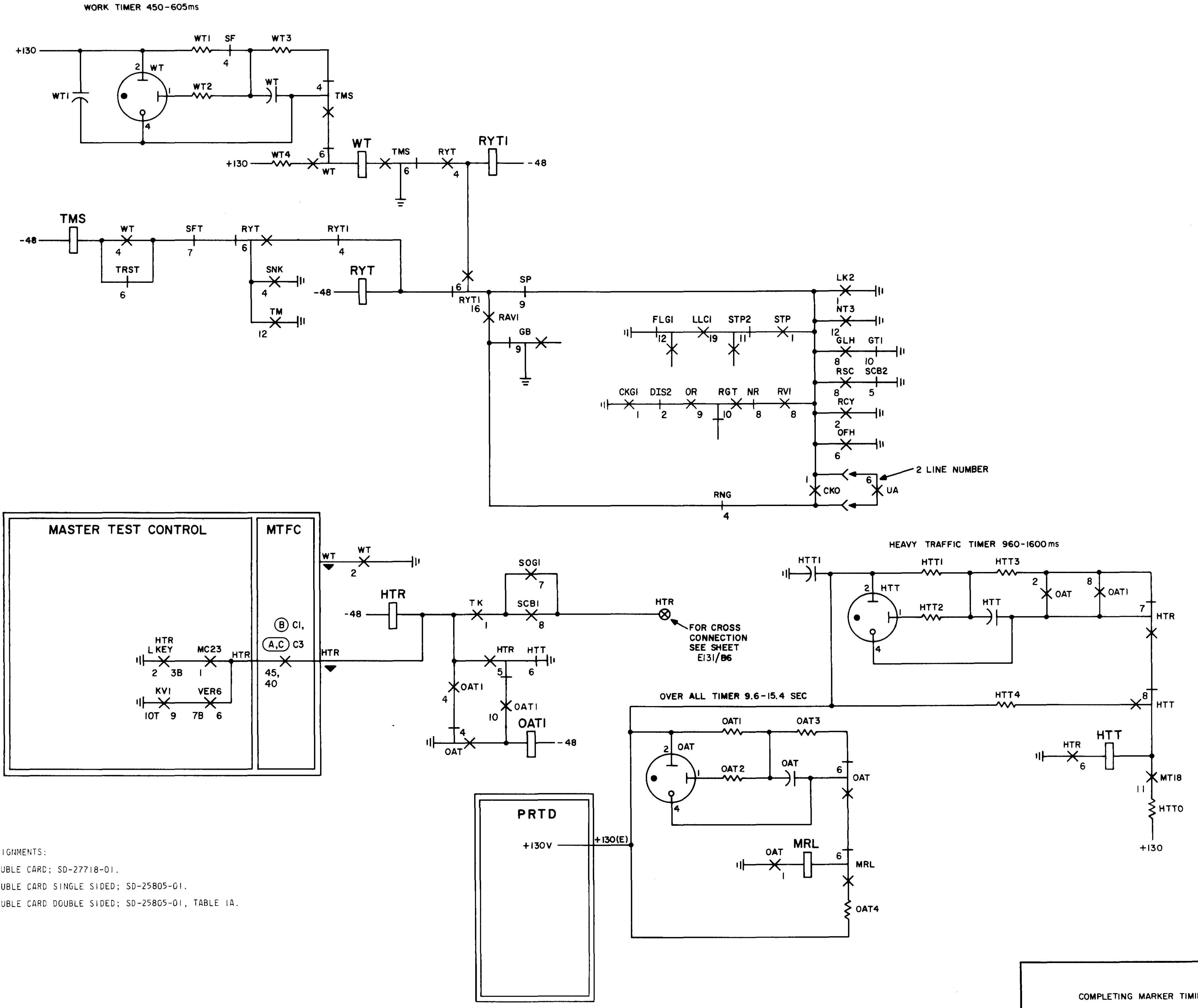
DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E134

COMPLETING MARKER



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01.
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01.
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A.

ISSUE 5

COMPLETING MARKER TIMING

SFD-10-01-E135

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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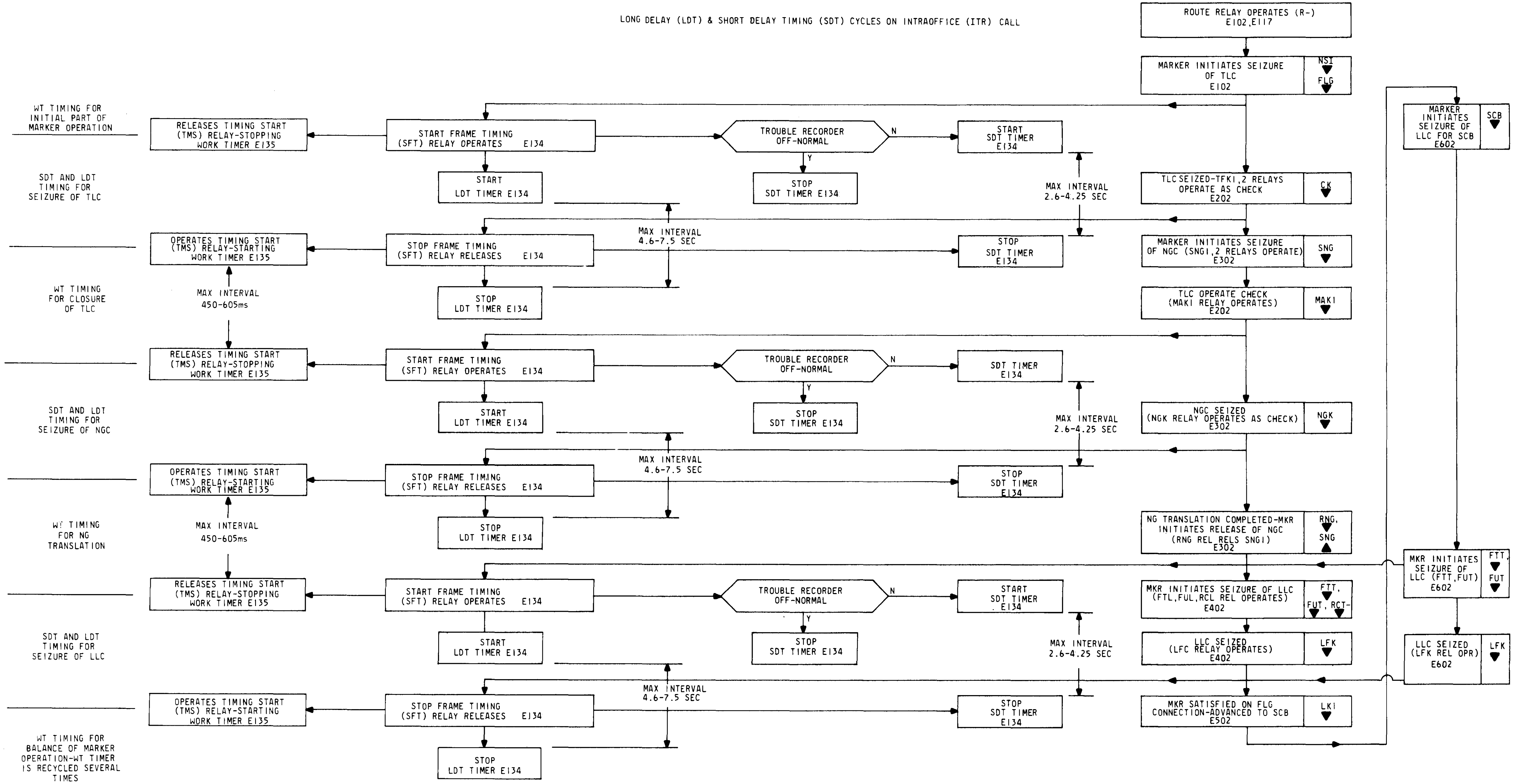
LONG DELAY (LDT) & SHORT DELAY TIMING (SDT) CYCLES ON INTRAOFFICE (ITR) CALL
ROUTE RELAY OPERATES (R-) E102,E117
MARKER INITIATES SEIZURE OF TLC E102
NSI
FLG
WT TIMING FOR INITIAL PART OF MARKER OPERATION
RELEASES TIMING START (TMS) RELAY-STOPPING WORK TIMER E135
START FRAME TIMING (SFT) RELAY OPERATES E134
TROUBLE RECORDER OFF-NORMAL
N
Y
START SDT TIMER E134
MARKER INITIATES SEIZURE OF LLC FOR SCB E602
SCB
SDT AND LDT TIMING FOR SEIZURE OF TLC
START LDT TIMER E134
STOP SDT TIMER E134
MAX INTERVAL 2.6-4.25 SEC
TLC SEIZED-TFK1,2 RELAYS OPERATE AS CHECK E202
CK
MAX INTERVAL 4.6-7.5 SEC
OPERATES TIMING START (TMS) RELAY-STARTING WORK TIMER E135
STOP FRAME TIMING (SFT) RELAY RELEASES E134
STOP SDT TIMER E134
MARKER INITIATES SEIZURE OF NGC (SNG1,2 RELAYS OPERATE) E302
SNG
WT TIMING FOR CLOSURE OF TLC
MAX INTERVAL 450-605ms
STOP LDT TIMER E134
TLC OPERATE CHECK (MAK1 RELAY OPERATES) E202
MAK1
RELEASES TIMING START (TMS) RELAY-STOPPING WORK TIMER E135
START FRAME TIMING (SFT) RELAY OPERATES E134
TROUBLE RECORDER OFF-NORMAL
N
Y
SDT TIMER E134
SDT AND LDT TIMING FOR SEIZURE OF NGC
START LDT TIMER E134
STOP SDT TIMER E134
MAX INTERVAL 2.6-4.25 SEC
NGC SEIZED (NGK RELAY OPERATES AS CHECK) E302
NGK
MAX INTERVAL 4.6-7.5 SEC
OPERATES TIMING START (TMS) RELAY-STARTING WORK TIMER E135
STOP FRAME TIMING (SFT) RELAY RELEASES E134
STOP SDT TIMER E134
WT TIMING FOR NG TRANSLATION
MAX INTERVAL 450-605ms
STOP LDT TIMER E134
NG TRANSLATION COMPLETED-MKR INITIATES RELEASE OF NGC (RNG REL RELS SNG1) E302
RNG,
SNG
MKR INITIATES SEIZURE OF LLC (FTT,FUT) E602
FTT,
FUT
RELEASES TIMING START (TMS) RELAY-STOPPING WORK TIMER E135
START FRAME TIMING (SFT) RELAY OPERATES E134
TROUBLE RECORDER OFF-NORMAL
N
Y
START SDT TIMER E134
MKR INITIATES SEIZURE OF LLC (FTL,FUL,RCL REL OPERATES) E402
FTT,
FUT, RCT-
SDT AND LDT TIMING FOR SEIZURE OF LLC
START LDT TIMER E134
STOP SDT TIMER E134
MAX INTERVAL 2.6-4.25 SEC
LLC SEIZED (LFC RELAY OPERATES) E402
LFK
LLC SEIZED (LFK REL OPR) E602
LFK
MAX INTERVAL 4.6-7.5 SEC
OPERATES TIMING START (TMS) RELAY-STARTING WORK TIMER E135
STOP FRAME TIMING (SFT) RELAY RELEASES E134
STOP SDT TIMER E134
MKR SATISFIED ON FLG CONNECTION-ADVANCED TO SCB E502
LK1
WT TIMING FOR BALANCE OF MARKER OPERATION-WT TIMER IS RECYCLED SEVERAL TIMES
STOP LDT TIMER E134

ISSUE
5

SFD-10-01-E136

FLOW CHART
LONG DELAY (LDT) & SHORT DELAY (SDT)
TIMING CYCLES ON IAO CALLS

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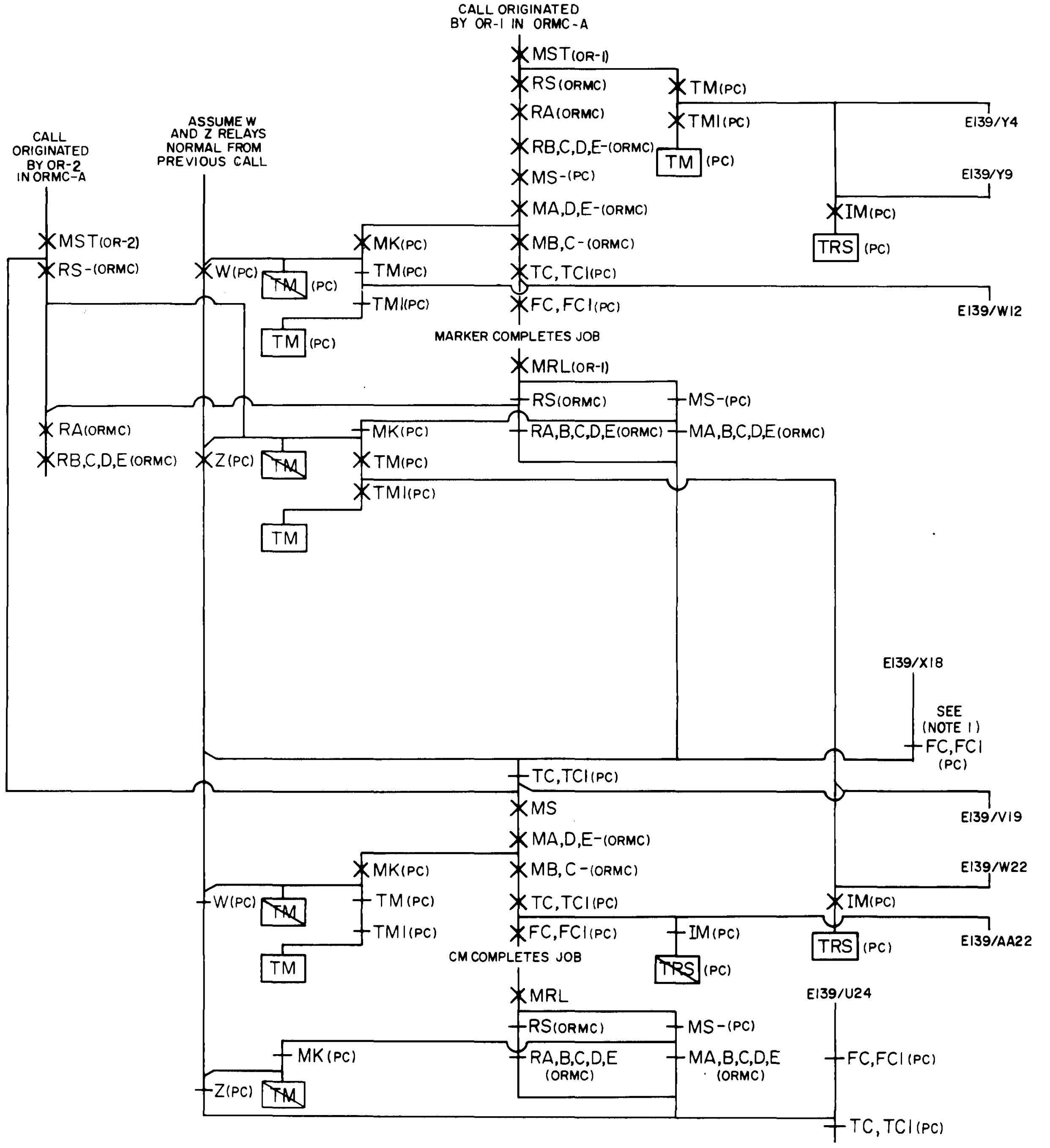
DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E136

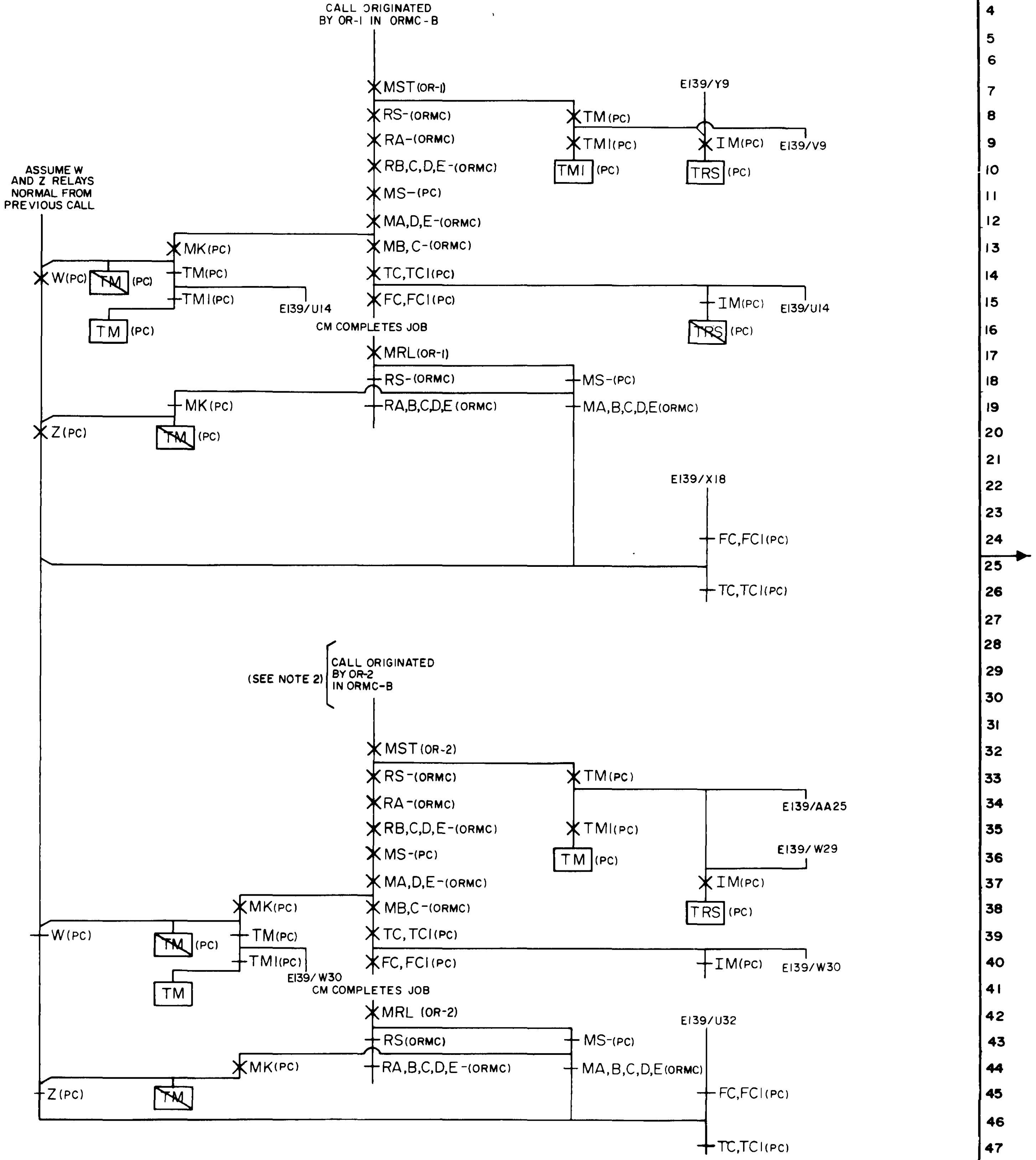
ORIGINATING MARKER CONNECTOR-A

(ALL REFERENCES ARE TO ORIGINATING REGISTERS AND PC ASSOCIATED WITH THIS CONNECTOR)



ORIGINATING MARKER CONNECTOR-B

(ALL REFERENCES ARE TO ORIGINATING REGISTERS AND PC ASSOCIATED WITH THIS CONNECTOR)



SHEET NOTES:

1. THE CALL FROM (OR2) IN (ORMC-A) IS GATED UNTIL CALLS IN CONNECTORS B AND C HAVE BEEN HANDLED. RELEASE OF THE FC, FC1 RELAYS IN THE (PC) BY THE (MTRC) UNGATES (ORMC-A).
2. (ORMC-B) WAS UNGATED (FC, FC1 RELAYS RELEASED BY MTRC) BEFORE A SECOND CALL WAS ORIGINATING.

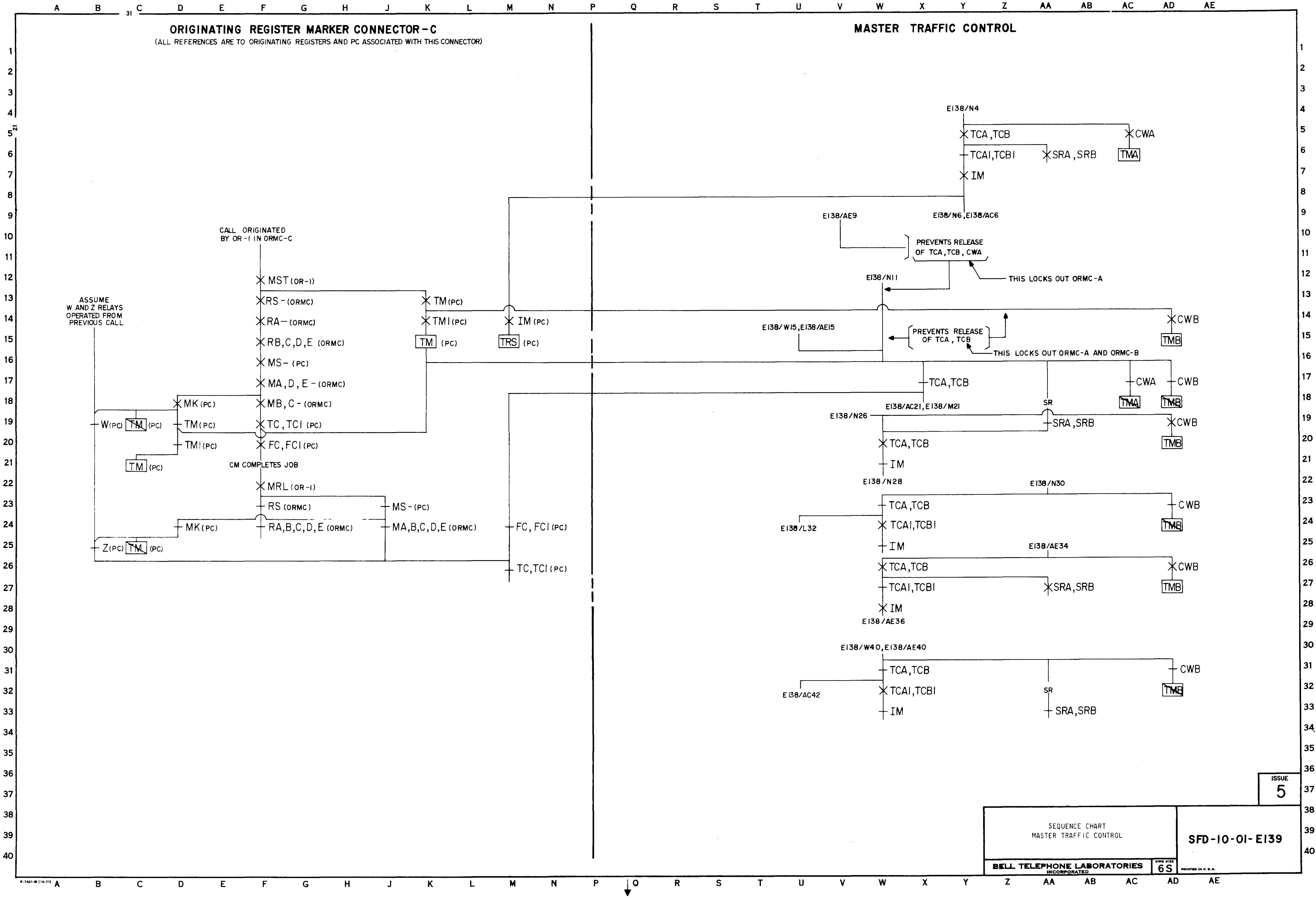
ISSUE
5

SFD-10-01-E138

SEQUENCE CHART
MASTER TRAFFIC CONTROL

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED



SEQUENCE CHART
MASTER TRAFFIC CONTROL

SFD-10-01-E139

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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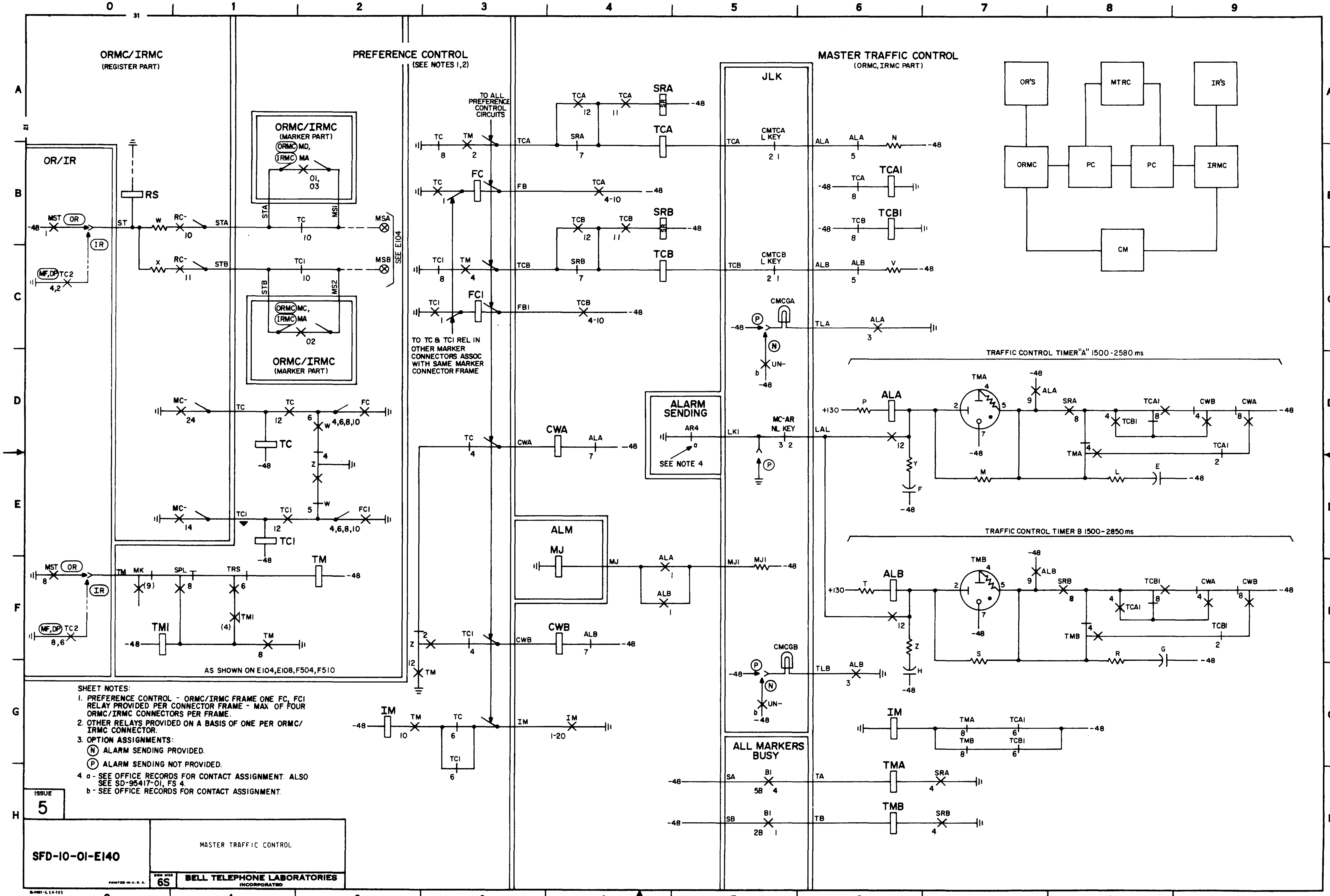
SFD-10-01-E139

BRUNING 44 131 24092

K-7421-B (10-71)



SHEET NOTES:

1. PREFERENCE CONTROL - ORMC/IRMC FRAME ONE FC, FCI RELAY PROVIDED PER CONNECTOR FRAME - MAX OF FOUR ORMC/IRMC CONNECTORS PER FRAME.
2. OTHER RELAYS PROVIDED ON A BASIS OF ONE PER ORMC/IRMC CONNECTOR.
3. OPTION ASSIGNMENTS:
   - Ⓝ ALARM SENDING PROVIDED.
   - Ⓟ ALARM SENDING NOT PROVIDED.
4. a - SEE OFFICE RECORDS FOR CONTACT ASSIGNMENT. ALSO SEE SD-95417-01, FS 4.
   b - SEE OFFICE RECORDS FOR CONTACT ASSIGNMENT.

ISSUE
5

SFD-10-01-E140

MASTER TRAFFIC CONTROL

6S
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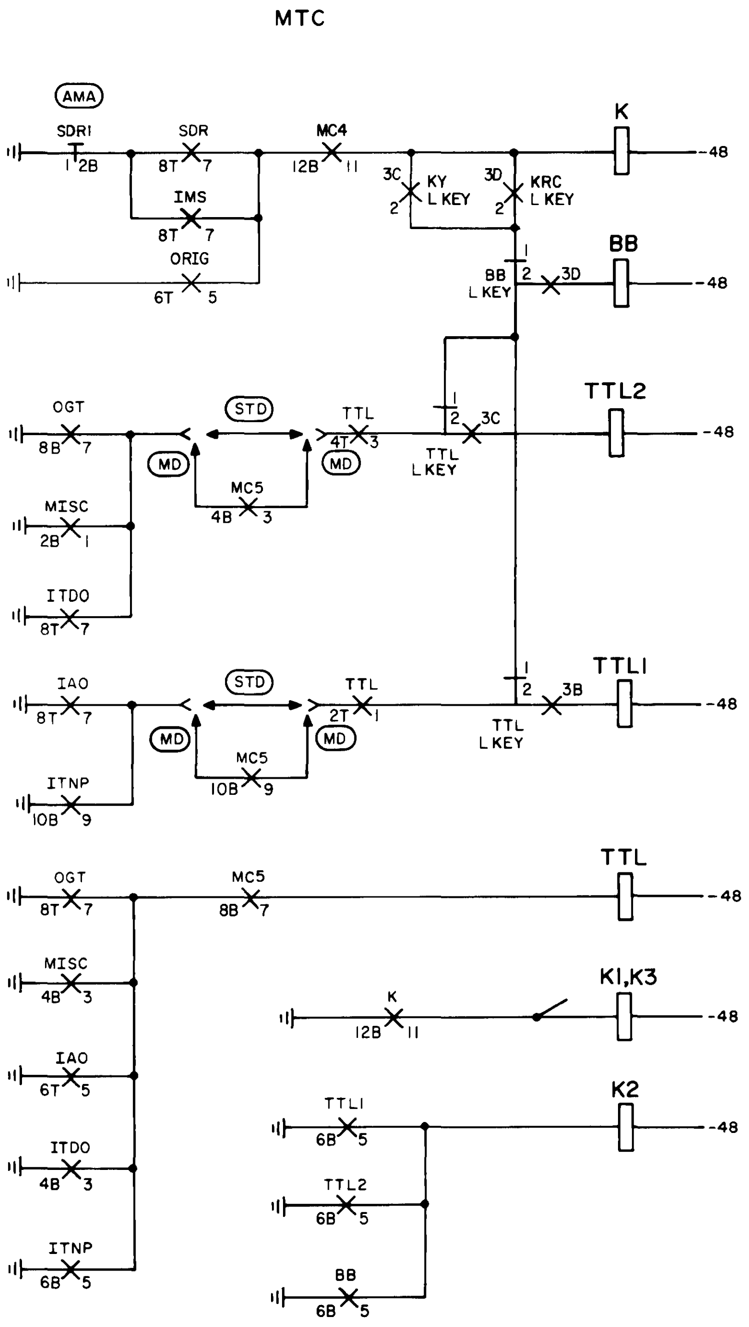
SFD-10-01-E140



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5

SFD-10-01-E142

TEST CALL DIGIT CONTROL

6S

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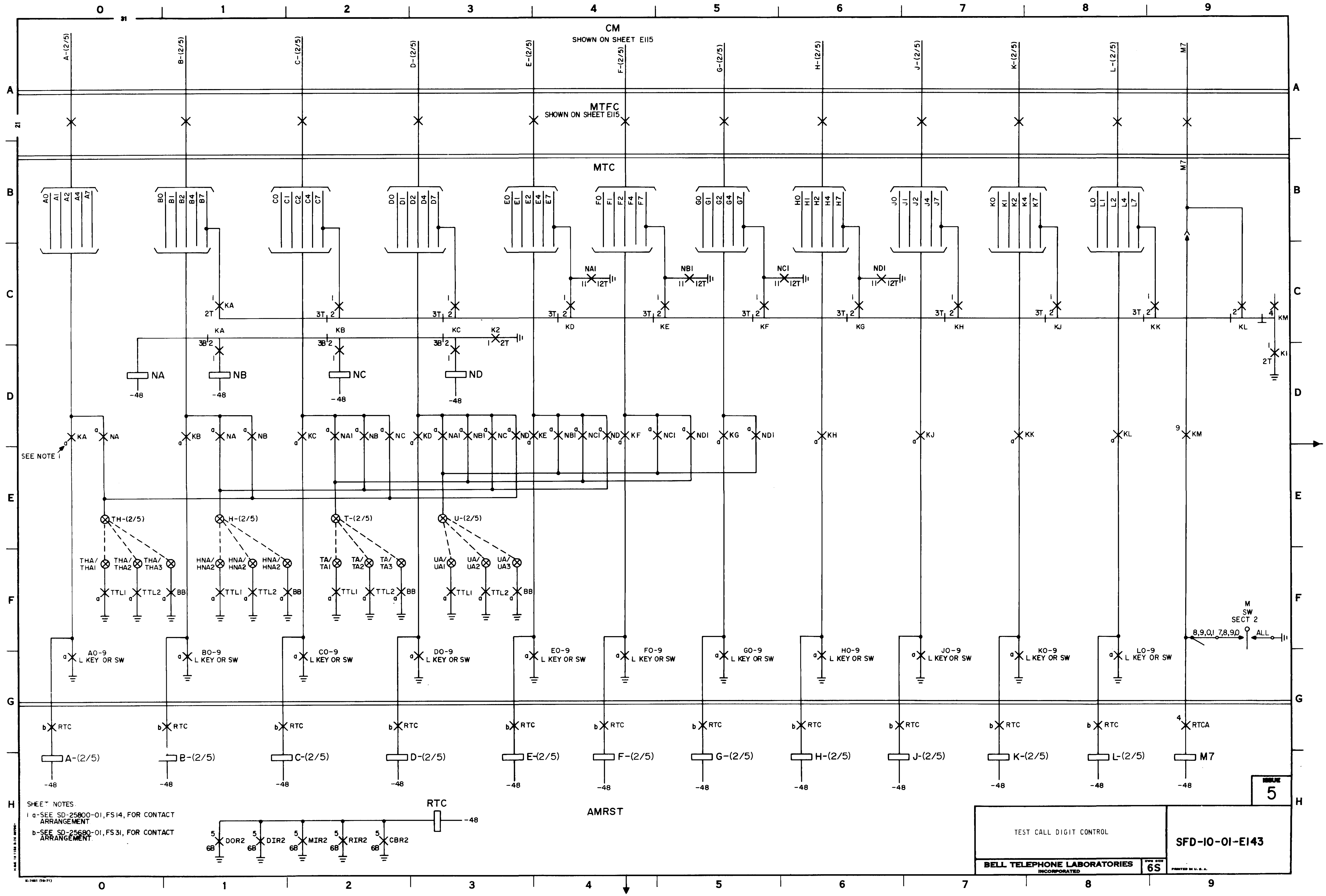
E-7461-L (4-73)

SFD-10-01-E142



SHEET NOTES.

1 a-SEE SD-25800-01, FS14, FOR CONTACT ARRANGEMENT

b-SEE SD-25680-01, FS31, FOR CONTACT ARRANGEMENT.

ISSUE 5

TEST CALL DIGIT CONTROL

SFD-10-01-E143

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

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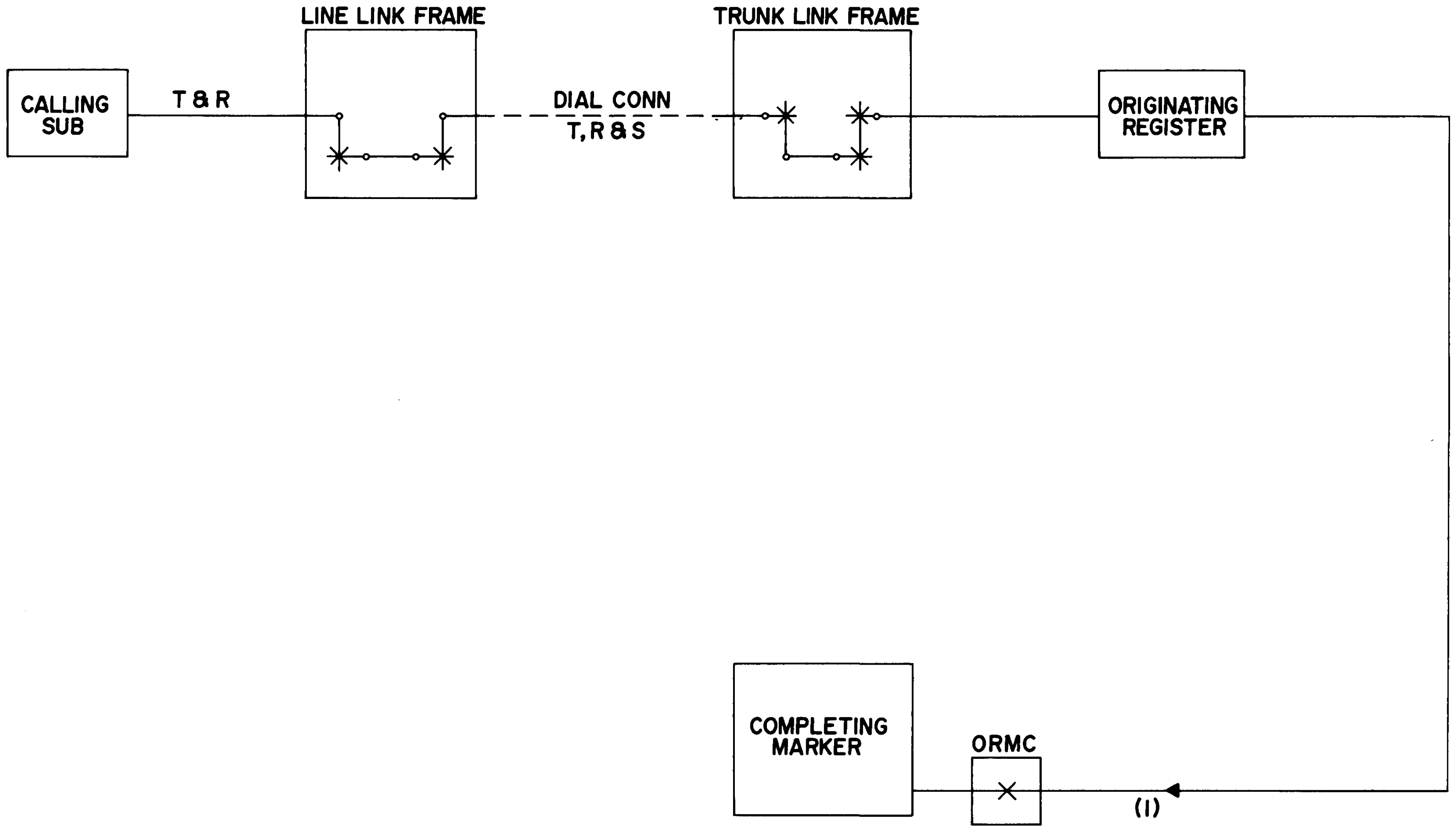
SFD-10-01-E143

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



INDEX

PAGE NO.	TITLE
E201	PART E2-CONNECTION TO TRUNK LINK AND TRUNK SELECT
E202	SEQUENCE CHART TRUNK LINK FRAME AND TRUNK SELECTION
E203	RESERVED
E204	IDLE TRUNK TEST
E205	TRUNK LINK FRAME SELECTION
E206	TRUNK LINK FRAME SEIZURE
E207	TRUNK LINK FRAME MEMORY
E208	TRUNK SEIZURE
E209	TRUNK SEIZURE
E210	TRUNK SELECTION TIMING
E211	OPERATION OF CONTROL RELAYS IN TRUNK LINK FRAME
E212	TRUNK CLASS CONTROL

CAUTION!

DUE TO THE SIMPLIFIED NATURE
OF THIS DOCUMENT, INFORMATION
SHOWN MAY NOT BE COMPLETE.

SFD-10-01-E201
2 SHEETS, SHEET 1

ISSUE
5

PART E2
CONNECTION TO TRUNK LINK
AND TRUNK SELECT

SFD-10-01-E201

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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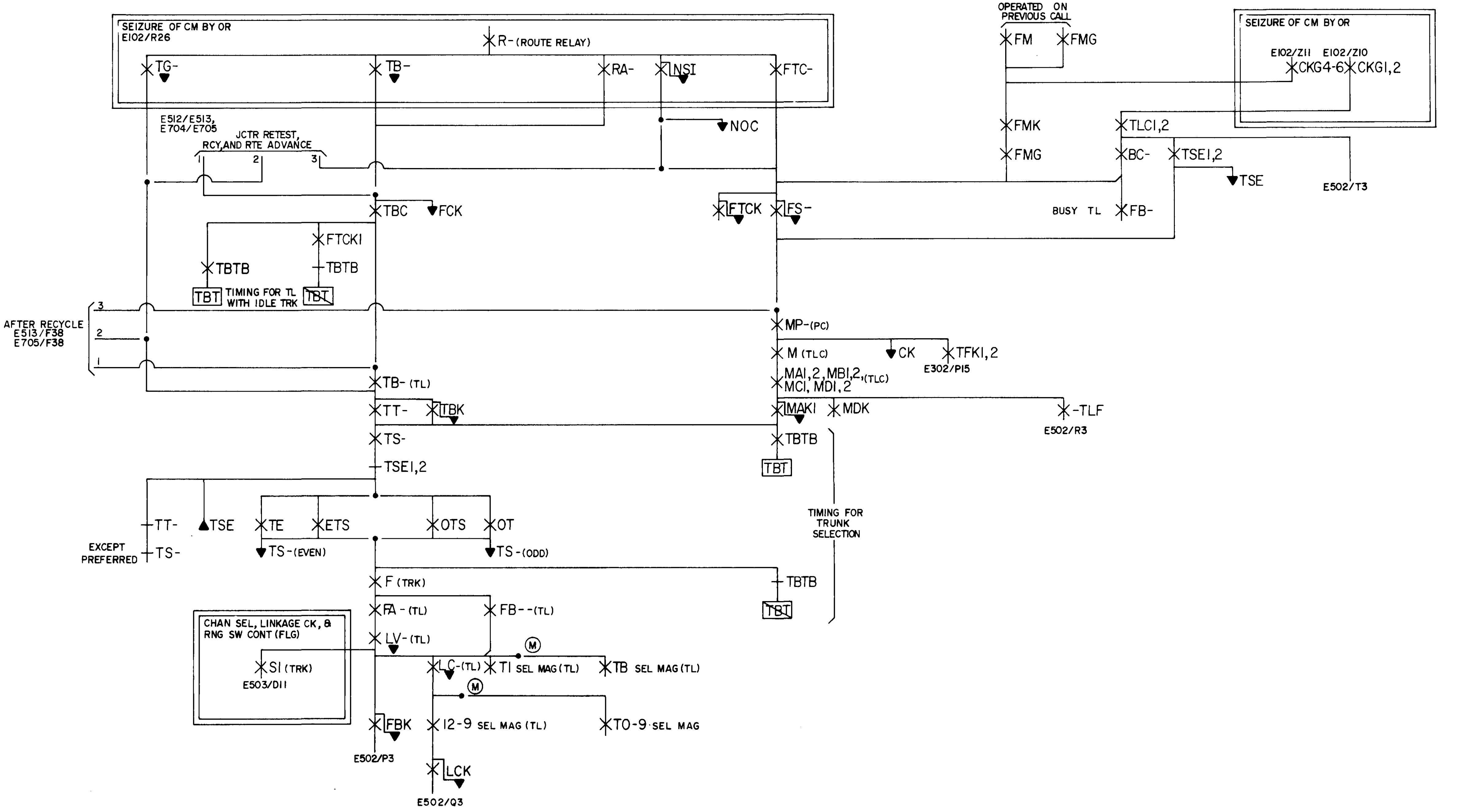
TRUNK LINK AND TRUNK SELECTION



SHEET NOTES:

1. OPTION ASSIGNMENT:

Ⓜ TRUNK LINK FRAME (SD-27879-01)

ISSUE
5

SFD-10-01-E202

SEQUENCE CHART
TRUNK LINK FRAME
AND TRUNK SELECTION

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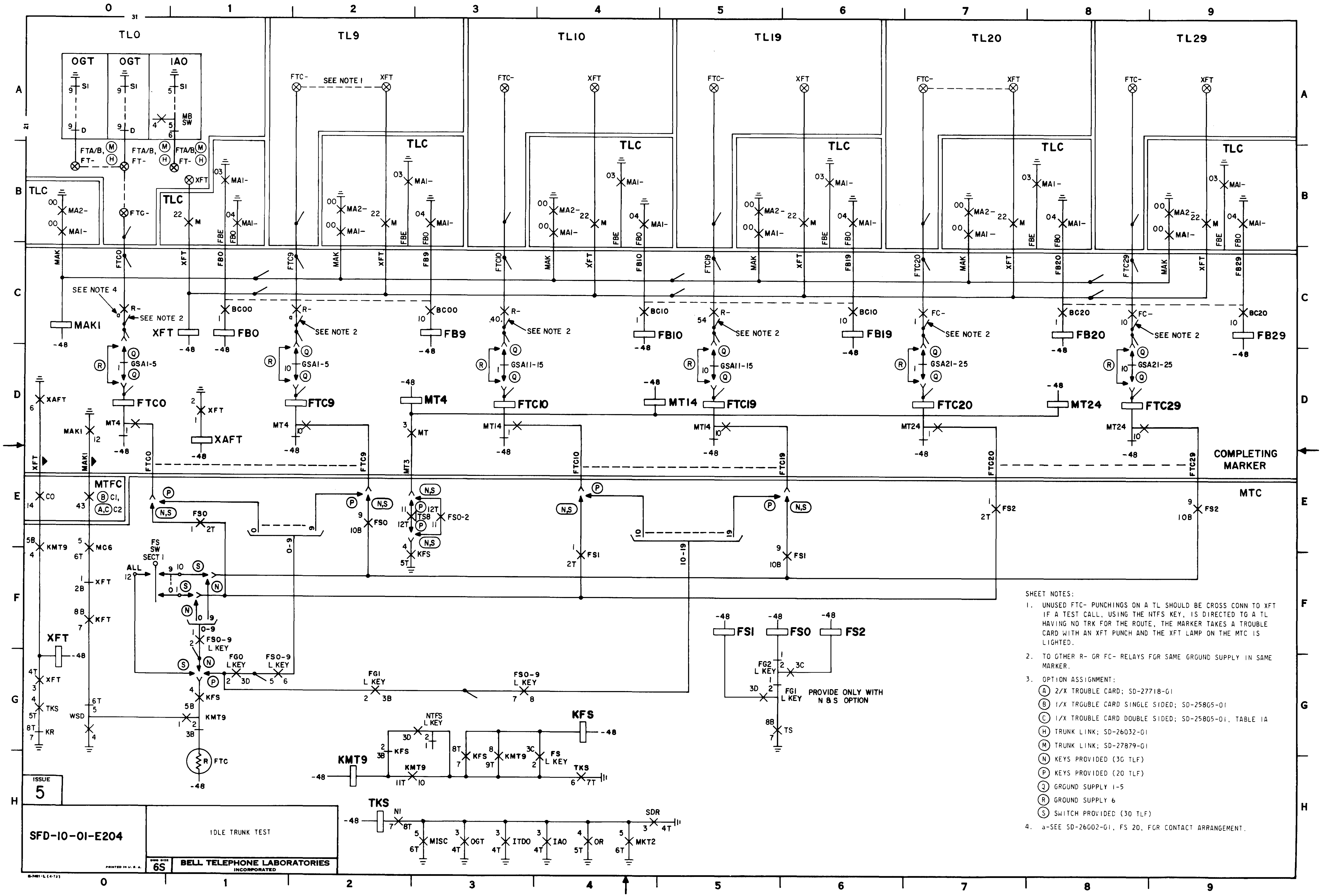
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-E202



SHEET NOTES:

1. UNUSED FTC- PUNCHINGS ON A TL SHOULD BE CROSS CONN TO XFT IF A TEST CALL, USING THE NTFS KEY, IS DIRECTED TO A TL HAVING NO TRK FOR THE ROUTE, THE MARKER TAKES A TROUBLE CARD WITH AN XFT PUNCH AND THE XFT LAMP ON THE MTC IS LIGHTED.
2. TO OTHER R- OR FC- RELAYS FOR SAME GROUND SUPPLY IN SAME MARKER.
3. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓗ TRUNK LINK; SD-26032-01
   - Ⓜ TRUNK LINK; SD-27879-01
   - Ⓝ KEYS PROVIDED (30 TLF)
   - Ⓟ KEYS PROVIDED (20 TLF)
   - Ⓠ GROUND SUPPLY 1-5
   - Ⓡ GROUND SUPPLY 6
   - Ⓢ SWITCH PROVIDED (30 TLF)
4. a-SEE SD-26002-01, FS 20, FOR CONTACT ARRANGEMENT.

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5

SFD-10-01-E204

IDLE TRUNK TEST

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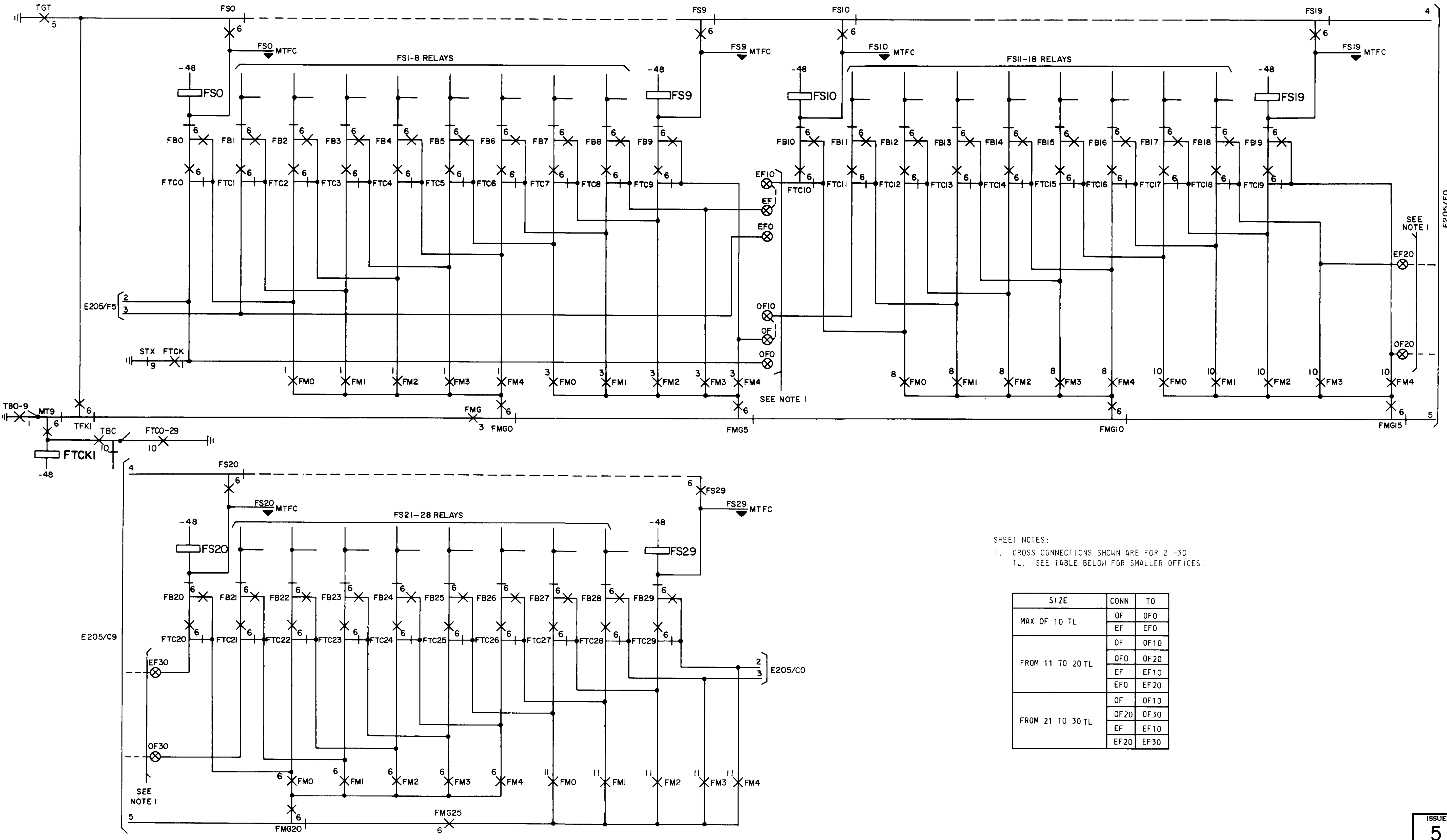
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E204

COMPLETING MARKER
TRUNK LINK FRAME SELECTION



SHEET NOTES:

1. CROSS CONNECTIONS SHOWN ARE FOR 21-30 TL. SEE TABLE BELOW FOR SMALLER OFFICES.

SIZE	CONN	TO
MAX OF 10 TL	OF	OF0
	EF	EF0
FROM 11 TO 20 TL	OF	OF10
	OF0	OF20
	EF	EF10
	EF0	EF20
FROM 21 TO 30 TL	OF	OF10
	OF20	OF30
	EF	EF10
	EF20	EF30

ISSUE
5

TRUNK LINK FRAME
SELECTION

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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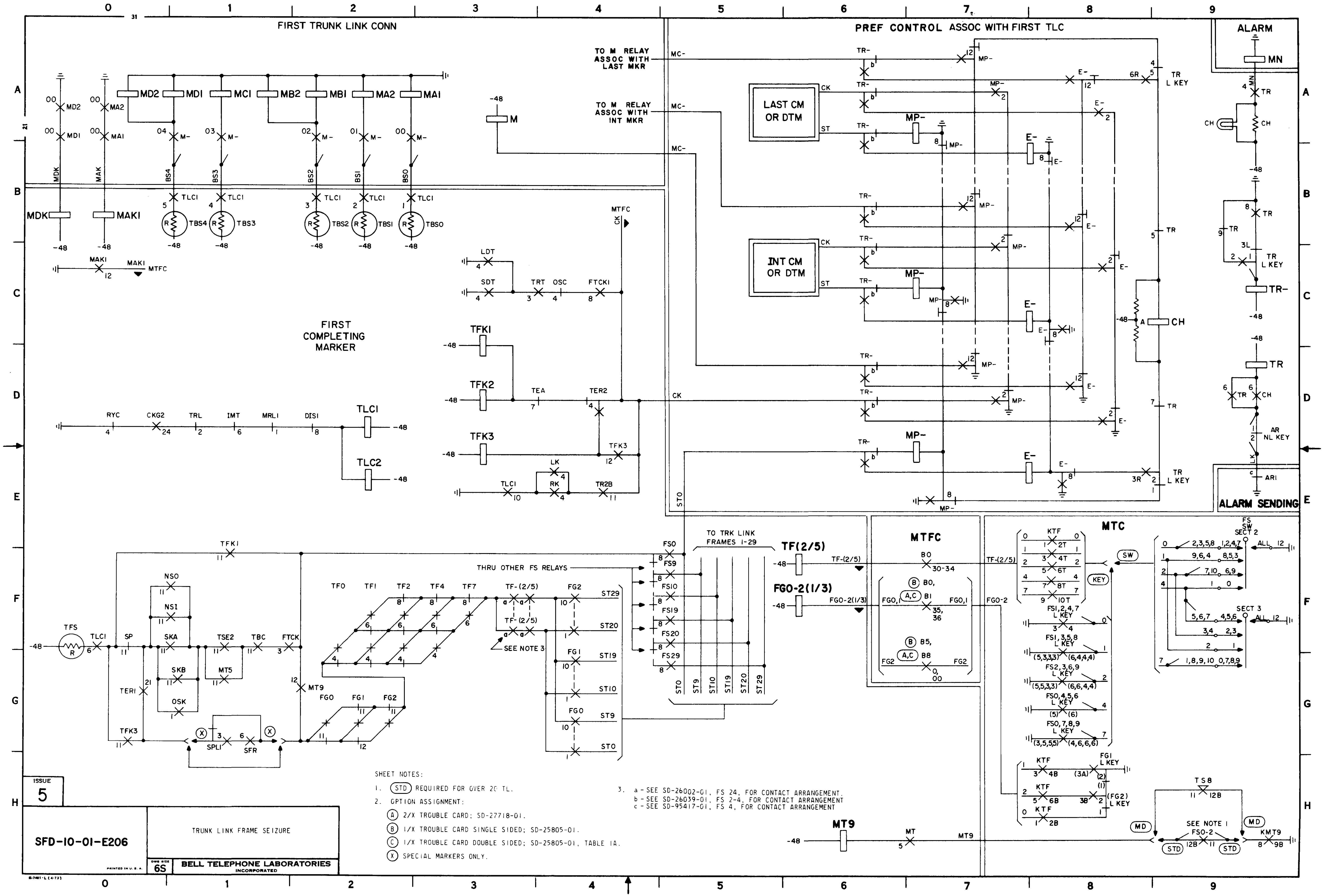
SFD-10-01-E205



SHEET NOTES:

1. (STD) REQUIRED FOR OVER 20 TL.
2. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01.
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01.
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A.
   - Ⓧ SPECIAL MARKERS ONLY.
3. a - SEE SD-26002-01, FS 24, FOR CONTACT ARRANGEMENT.
   b - SEE SD-26039-01, FS 2-4, FOR CONTACT ARRANGEMENT
   c - SEE SD-95417-01, FS 4, FOR CONTACT ARRANGEMENT

ISSUE
5

SFD-10-01-E206

TRUNK LINK FRAME SEIZURE

DWG SIZE
6S

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E-7481-L (4-73)

SFD-10-01-E206

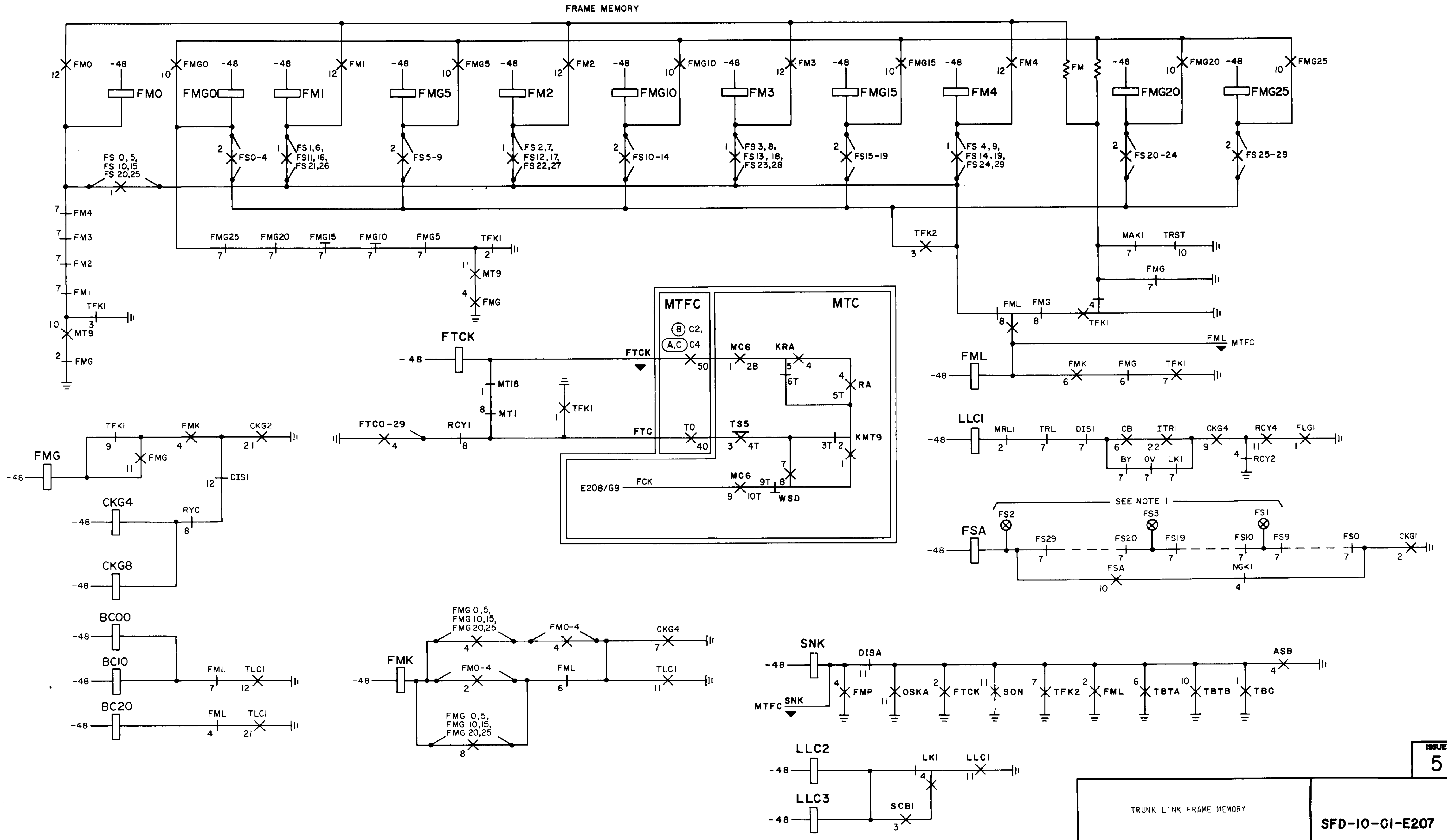
COMPLETING MARKER

SHEET NOTES:

1.

SIZE	CONNECT	TO
MAX OF 10 TL	FS1	FS2
FROM 11 TO 20 TL	FS2	FS3
OVER 20	NONE	

2. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A



TRUNK LINK FRAME MEMORY

SFD-10-01-E207

ISSUE 5

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

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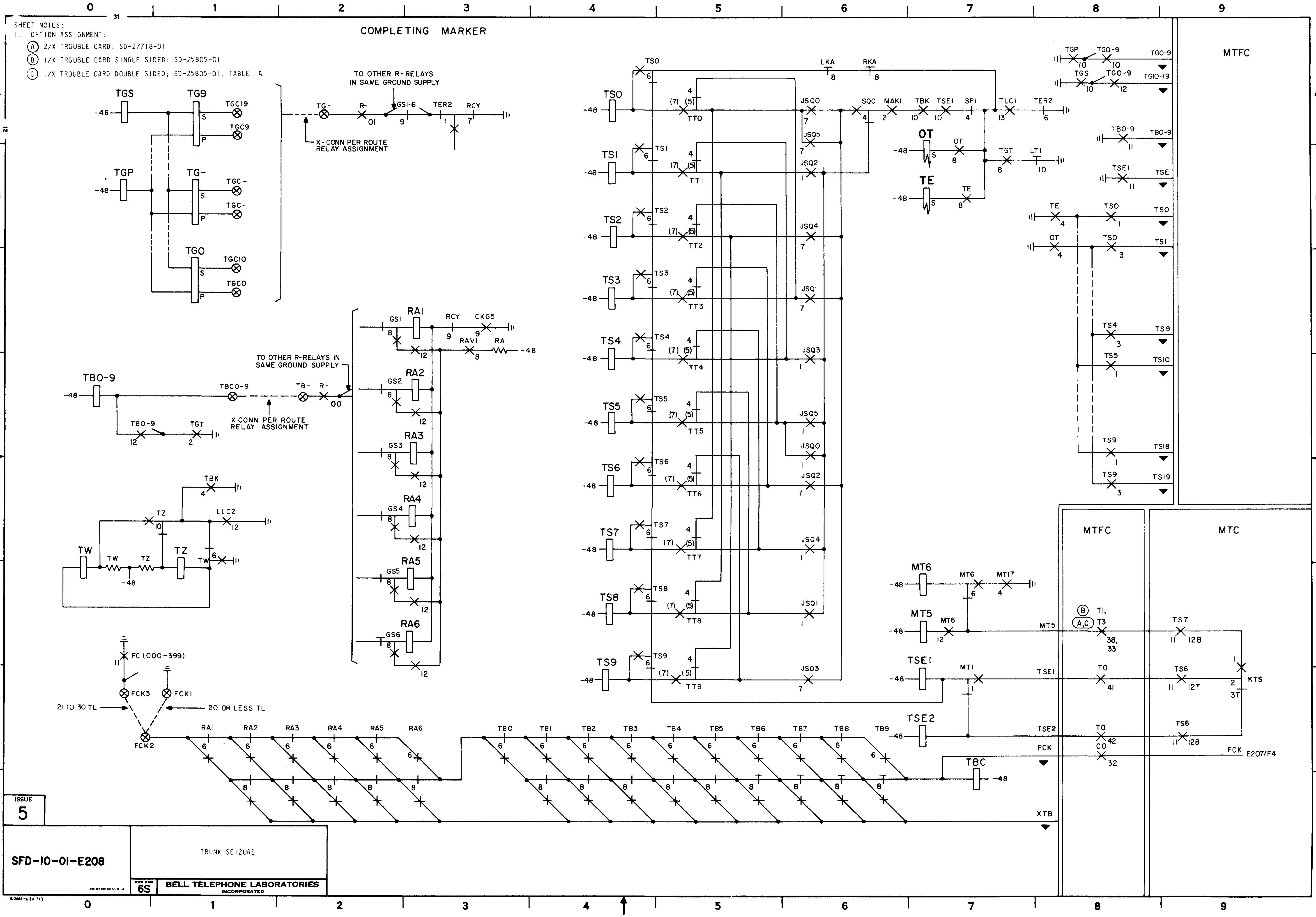
SHEET NOTES:
1. OPTION ASSIGNMENT:
Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A



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5

SFD-10-01-E208

TRUNK SEIZURE

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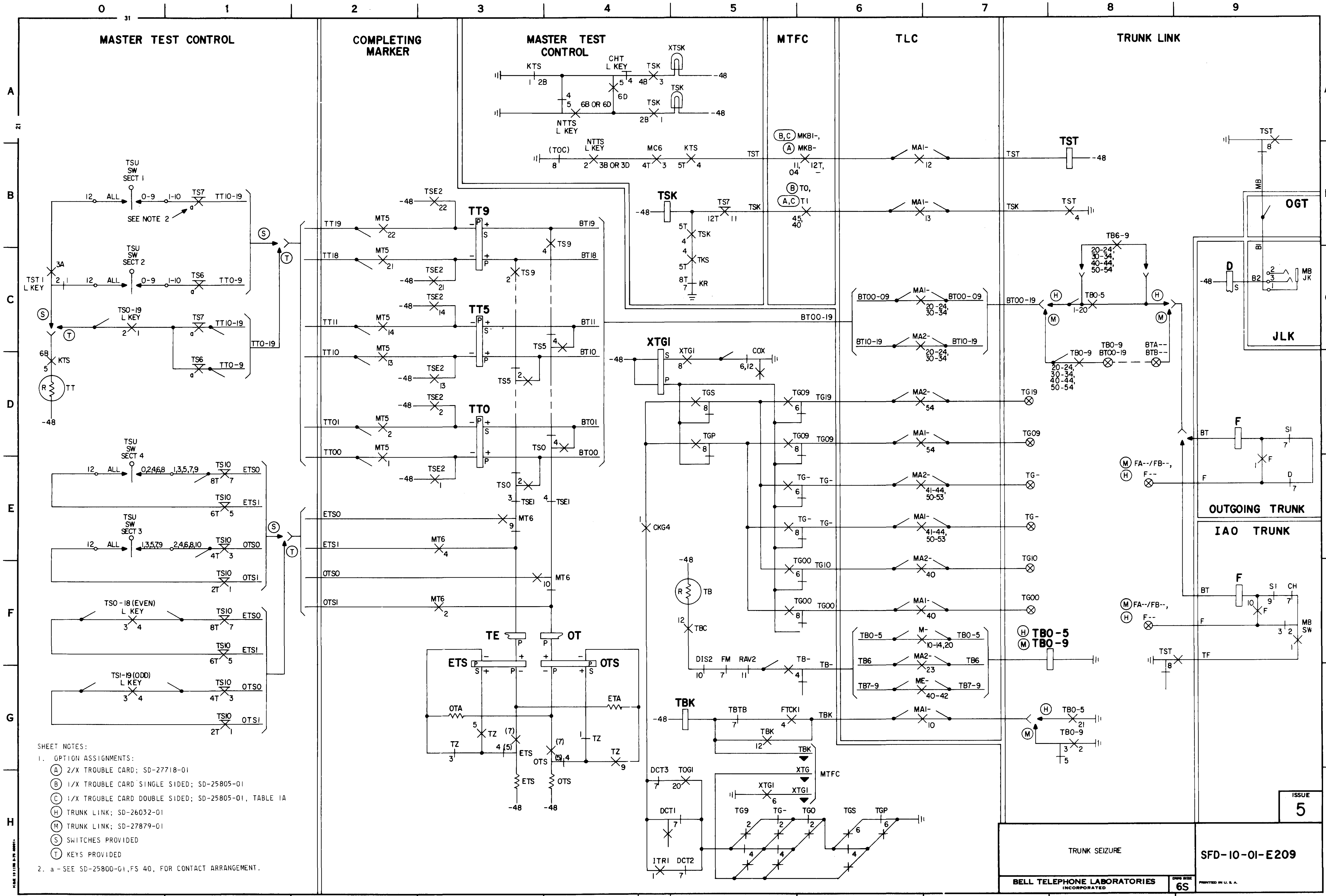
DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-E208



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓗ TRUNK LINK; SD-26032-01
   - Ⓜ TRUNK LINK; SD-27879-01
   - Ⓢ SWITCHES PROVIDED
   - Ⓣ KEYS PROVIDED
2. a - SEE SD-25800-01,FS 40, FOR CONTACT ARRANGEMENT.

TRUNK SEIZURE

SFD-10-01-E209

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INCORPORATED

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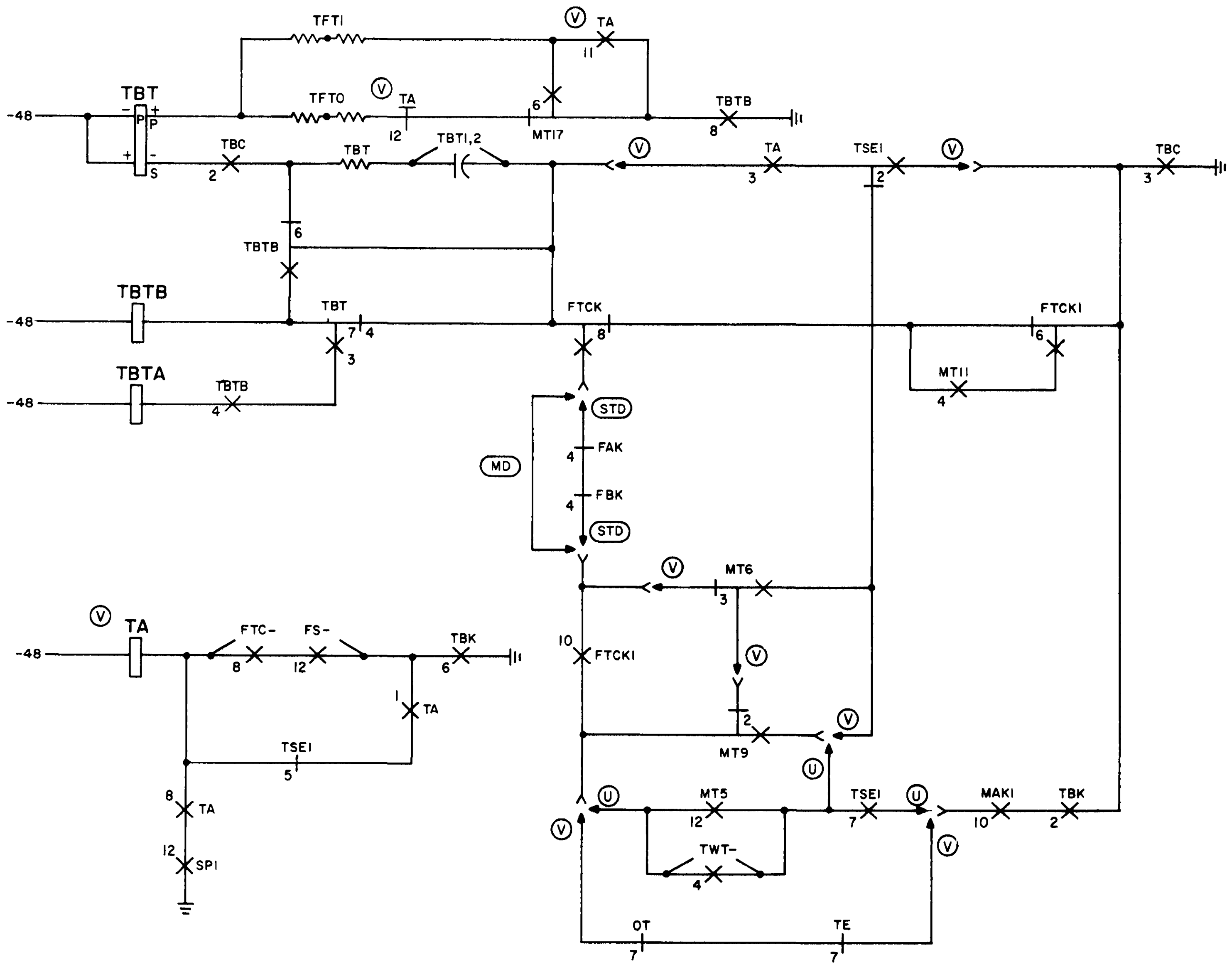
E-7421 (10-71)

SFD-10-01-E209

COMPLETING MARKER



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓤ (MD)

Ⓥ (STD) PROVIDES DETECTION OF OPEN BUSY TEST LEADS FOR 2 WAY TRUNKS.

ISSUE 5

SFD-10-01-E210

TRUNK SELECTION TIMING

6S

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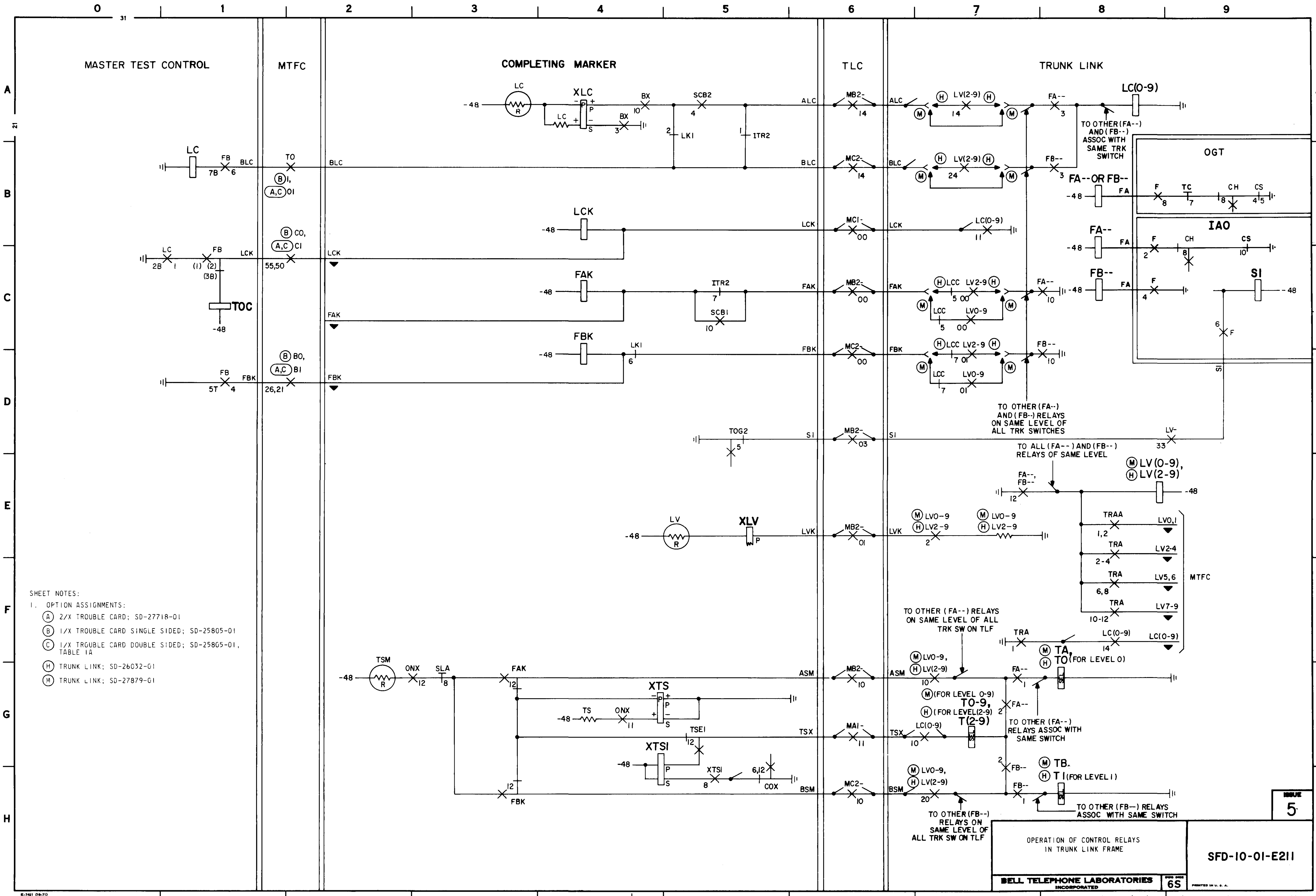
SFD-10-01-E210


MASTER TEST CONTROL
MTFC
COMPLETING MARKER
TLC
TRUNK LINK
LC
XLC
BX
SCB2
ALC
MB2-
LV(2-9)
FA--
LC(0-9)
TO OTHER (FA--) AND (FB--) ASSOC WITH SAME TRK SWITCH
LKI
ITR2
TO
BLC
MC2-
FB--
OGT
FA--OR FB--
F
TC
CH
CS
LCK
MCI-
IAO
FB
TOC
FAK
SCBI
FB--
SI
FBK
LCC
LV2-9
LV0-9
TO OTHER (FA--) AND (FB--) RELAYS ON SAME LEVEL OF ALL TRK SWITCHES
TOG2
LV-
TO ALL (FA--) AND (FB--) RELAYS OF SAME LEVEL
LV(0-9), LV(2-9)
LV
XLV
LVK
TRAA
TRA
LV0,1
LV2-4
LV5,6
LV7-9
MTFC
TO OTHER (FA--) RELAYS ON SAME LEVEL OF ALL TRK SW ON TLF
TA, TO (FOR LEVEL 0)
TSM
ONX
SLA
XTS
TS
ASM
XTSI
TSEI
TSX
MAI-
(FOR LEVEL 0-9) T0-9,
(FOR LEVEL(2-9) T(2-9)
TO OTHER (FA--) RELAYS ASSOC WITH SAME SWITCH
TB, T I (FOR LEVEL I)
XTSI
COX
BSM
TO OTHER (FB--) RELAYS ON SAME LEVEL OF ALL TRK SW ON TLF
TO OTHER (FB--) RELAYS ASSOC WITH SAME SWITCH
-48

SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓗ TRUNK LINK; SD-26032-01
   - Ⓜ TRUNK LINK; SD-27879-01

ISSUE 5

OPERATION OF CONTROL RELAYS
IN TRUNK LINK FRAME

SFD-10-01-E211

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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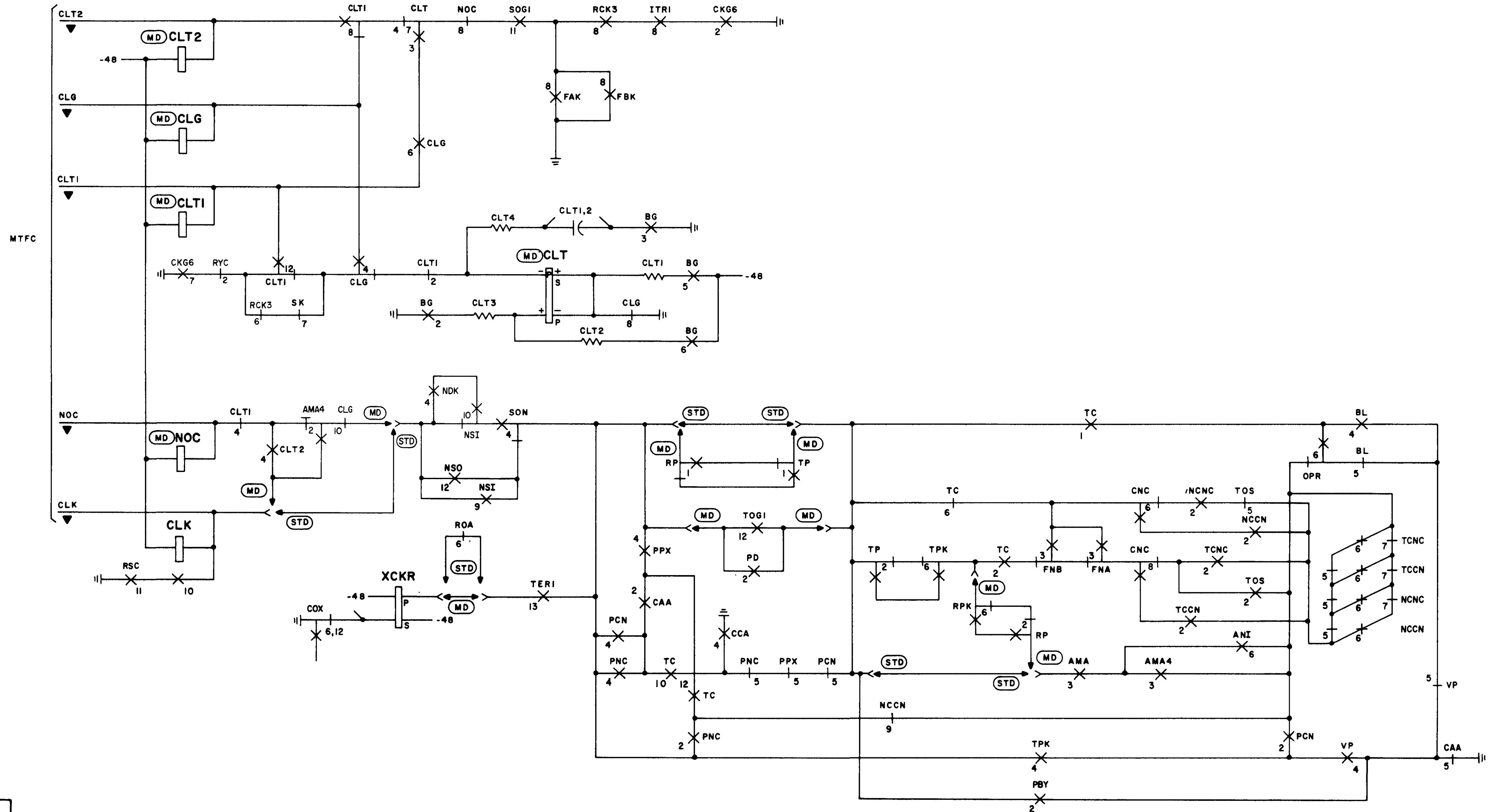
COMPLETING MARKER



ISSUE
5

SFD-10-01-E212

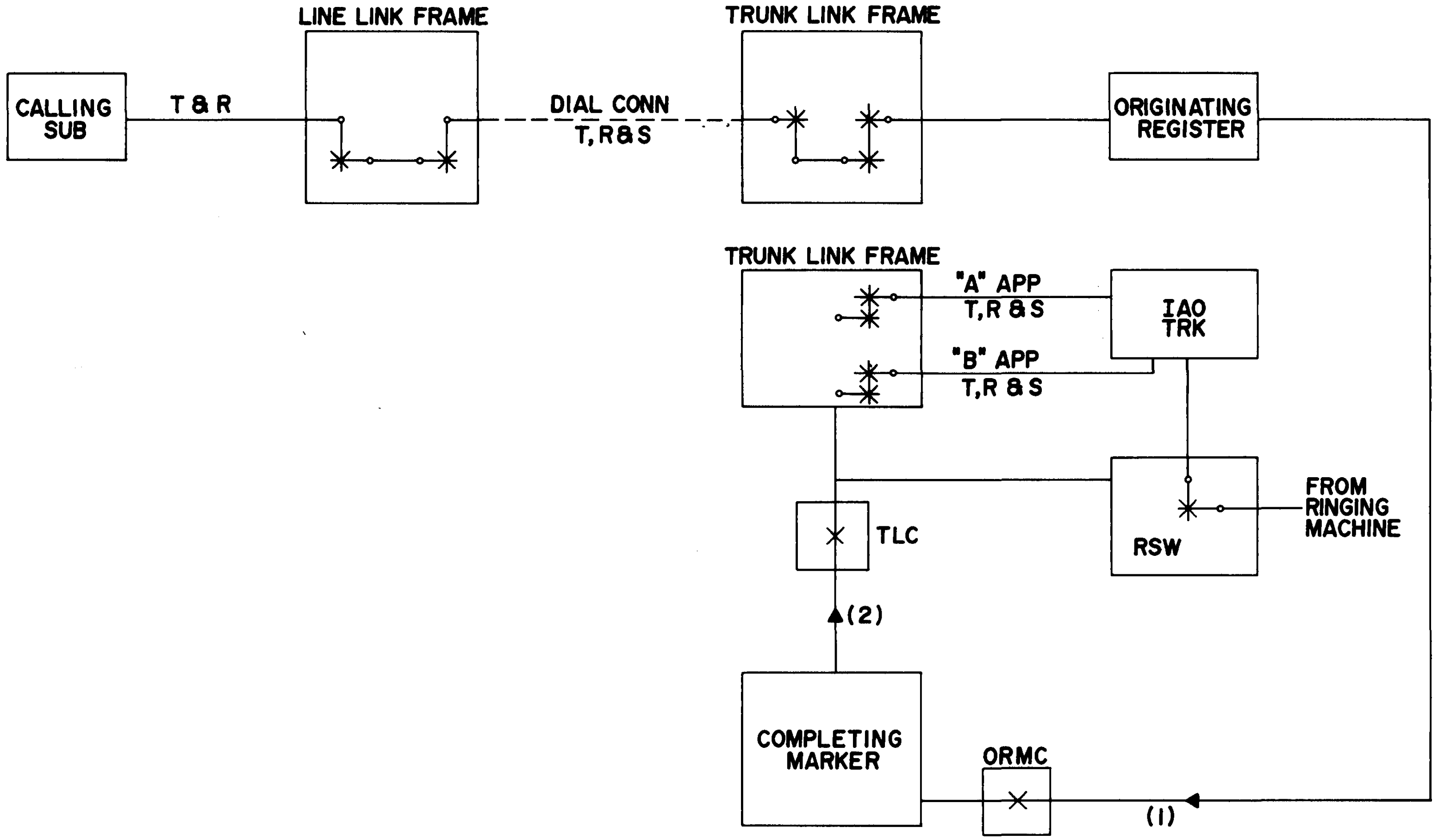
TRUNK CLASS CONTROL

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E212

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



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E301	PART E3 CONNECTION TO NUMBER GROUP
E302	SEQUENCE CHART NUMBER GROUP SEIZURE AND CALLED NUMBER TRANSLATION
E303	RESERVED
E304	RESERVED
E305	NUMBER SERIES START SELECTION
E306	NUMBER GROUP START AND OFF-NORMAL CONTROL
E307	NUMBER GROUP SEIZURE
E308	HUNDREDS & TENS DIGIT NUMBER GROUP INFORMATION & TENS BLOCK SCREENING SELECTION
E309	PHYSICAL, THEORETICAL, AND NUMBER GROUP CHECK
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E311	UNITS DIGIT CONTROL
E312	NUMBER GROUP TRANSLATION
E313	RINGING COMBINATION CONTROL AND VERIFICATION BY TEST FRAME
E314	LINE VERFICATION MATCH
E315	LINE LOCATION CONTROL
E316	NUMBER GROUP RELEASE CONTROL
E317	BLANK NUMBER, INTERCEPT, AND PBX RECYCLE

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE
5

PART E3
CONNECTION
TO NUMBER GROUP

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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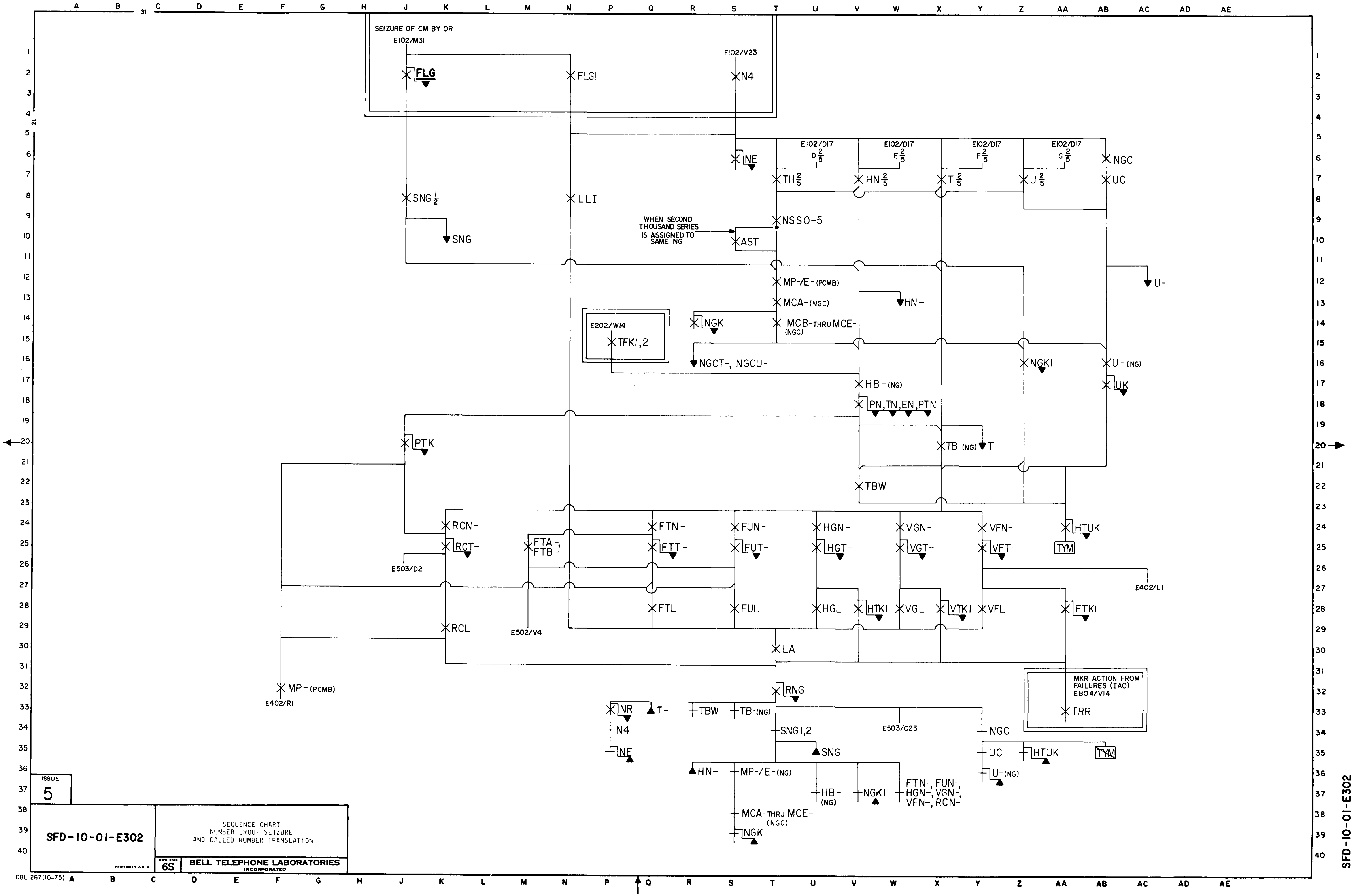
SFD-10-01-E301



ISSUE
5

SFD-10-01-E302

SEQUENCE CHART
NUMBER GROUP SEIZURE
AND CALLED NUMBER TRANSLATION

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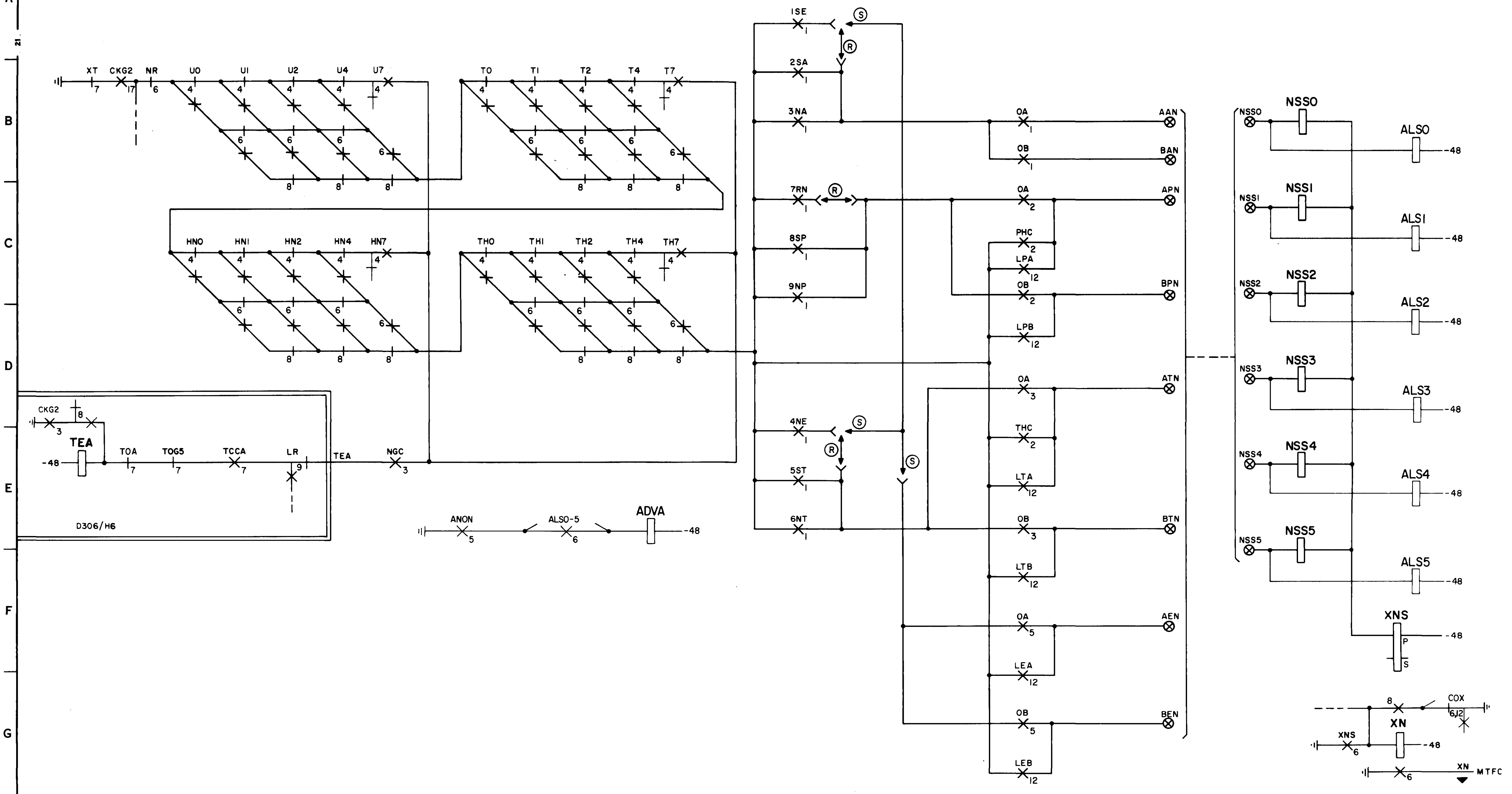
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

CBL-267(10-75)

COMPLETING MARKER



SHEET NOTES:

1. OPTION ASSIGNMENTS:

TABLE OF OPTIONS		
TL INDICATES TRK AS TOLL (T), FULL SELECT (F), OR MANUAL (M)	YES (A&M)	R
	NO (STD)	S

ISSUE 5

NUMBER SERIES START SELECTION

SFD-10-01-E305

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

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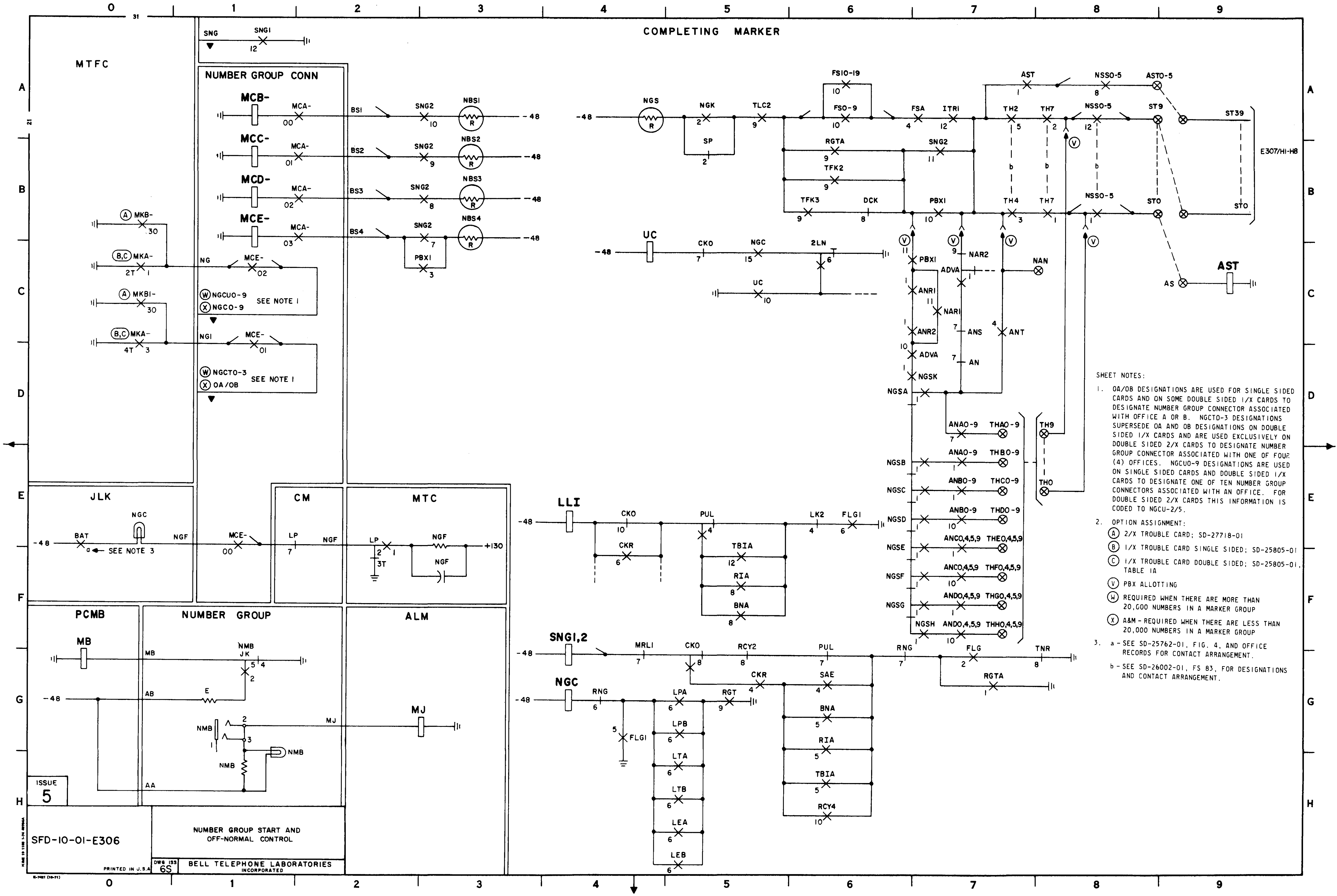
E-7421 (10-71)

SFD-10-01-E305



SHEET NOTES:

1. OA/OB DESIGNATIONS ARE USED FOR SINGLE SIDED CARDS AND ON SOME DOUBLE SIDED 1/X CARDS TO DESIGNATE NUMBER GROUP CONNECTOR ASSOCIATED WITH OFFICE A OR B. NGCT0-3 DESIGNATIONS SUPERSEDE OA AND OB DESIGNATIONS ON DOUBLE SIDED 1/X CARDS AND ARE USED EXCLUSIVELY ON DOUBLE SIDED 2/X CARDS TO DESIGNATE NUMBER GROUP CONNECTOR ASSOCIATED WITH ONE OF FOUR (4) OFFICES. NGCU0-9 DESIGNATIONS ARE USED ON SINGLE SIDED CARDS AND DOUBLE SIDED 1/X CARDS TO DESIGNATE ONE OF TEN NUMBER GROUP CONNECTORS ASSOCIATED WITH AN OFFICE. FOR DOUBLE SIDED 2/X CARDS THIS INFORMATION IS CODED TO NGCU-2/5.

2. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓥ PBX ALLOTTING
   - Ⓦ REQUIRED WHEN THERE ARE MORE THAN 20,000 NUMBERS IN A MARKER GROUP
   - Ⓧ A&M - REQUIRED WHEN THERE ARE LESS THAN 20,000 NUMBERS IN A MARKER GROUP

3. a - SEE SD-25762-01, FIG. 4, AND OFFICE RECORDS FOR CONTACT ARRANGEMENT.

   b - SEE SD-26002-01, FS 83, FOR DESIGNATIONS AND CONTACT ARRANGEMENT.

ISSUE
5

SFD-10-01-E306

NUMBER GROUP START AND
OFF-NORMAL CONTROL

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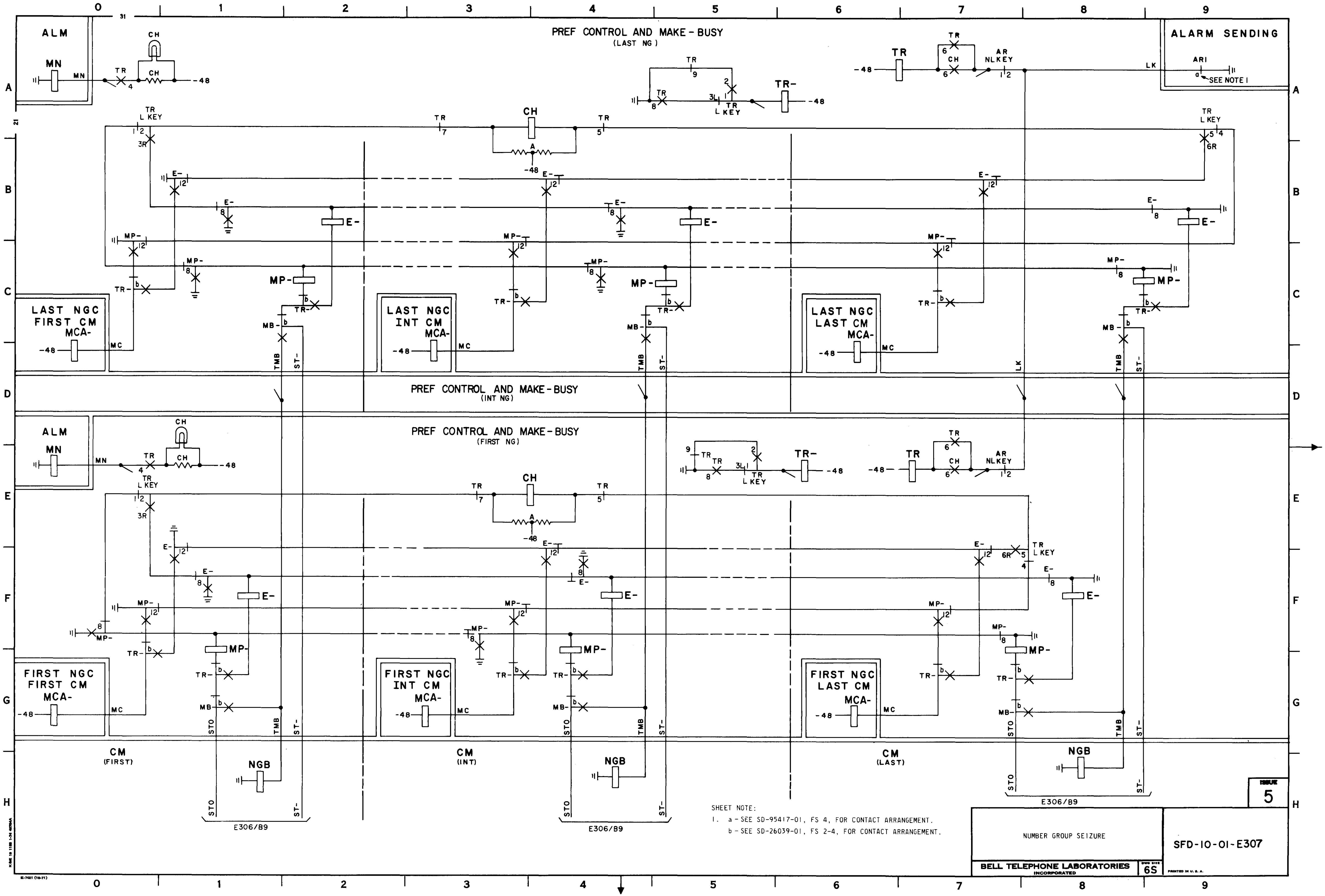
DWG ISS
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E306



SHEET NOTE:

1. a - SEE SD-95417-01, FS 4, FOR CONTACT ARRANGEMENT.
   b - SEE SD-26039-01, FS 2-4, FOR CONTACT ARRANGEMENT.

ISSUE 5

NUMBER GROUP SEIZURE

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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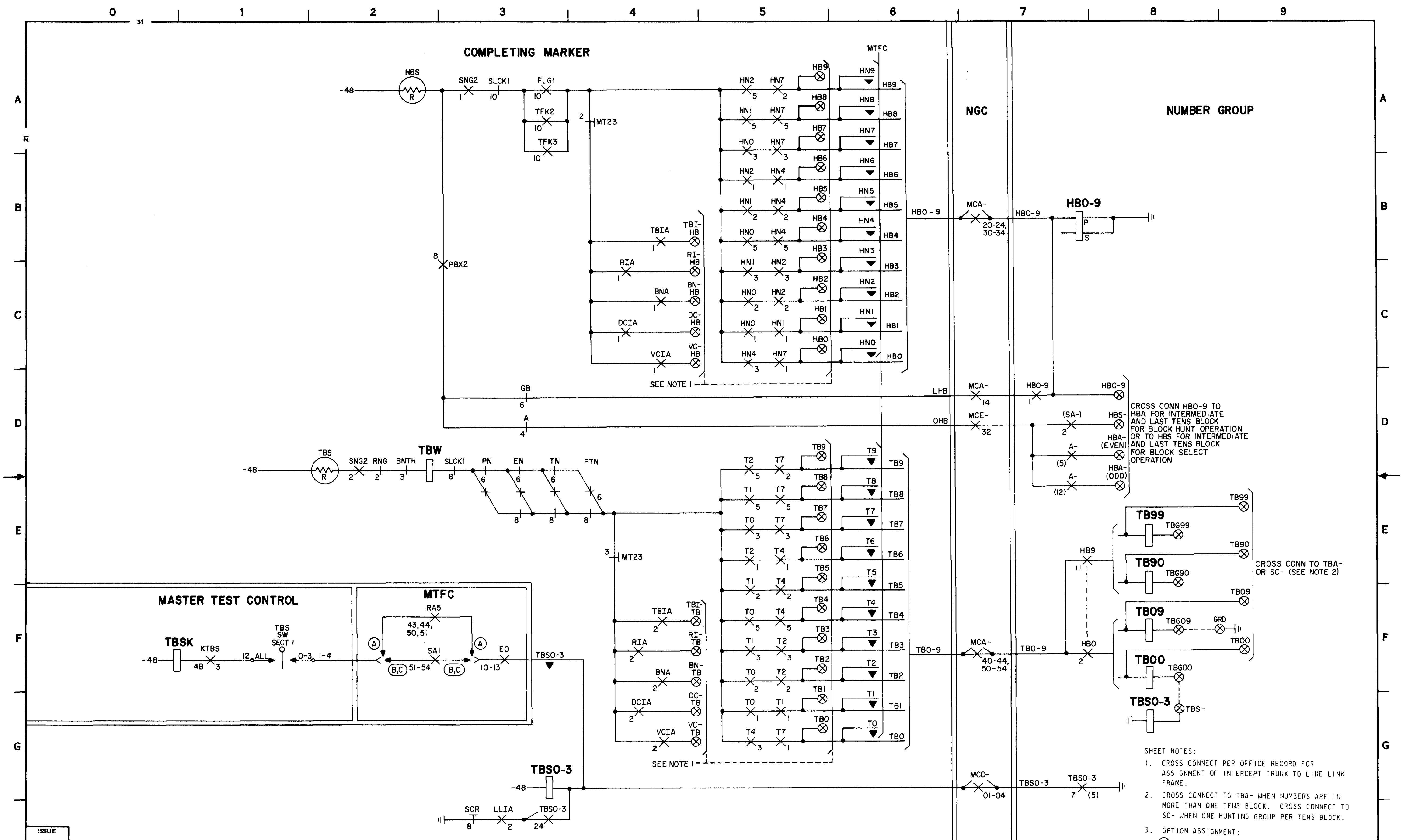
SFD-10-01-E307

SFD-10-01-E307



CROSS CONN HBO-9 TO HBA FOR INTERMEDIATE AND LAST TENS BLOCK FOR BLOCK HUNT OPERATION OR TO HBS FOR INTERMEDIATE AND LAST TENS BLOCK FOR BLOCK SELECT OPERATION

CROSS CONN TO TBA- OR SC- (SEE NOTE 2)

SHEET NOTES:

1. CROSS CONNECT PER OFFICE RECORD FOR ASSIGNMENT OF INTERCEPT TRUNK TO LINE LINK FRAME.
2. CROSS CONNECT TO TBA- WHEN NUMBERS ARE IN MORE THAN ONE TENS BLOCK. CROSS CONNECT TO SC- WHEN ONE HUNTING GROUP PER TENS BLOCK.
3. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

ISSUE
5

SFD-10-01-E308

HUNDREDS AND TENS DIGIT NUMBER
GROUP INFORMATION AND TENS
BLOCK SCREENING SELECTION

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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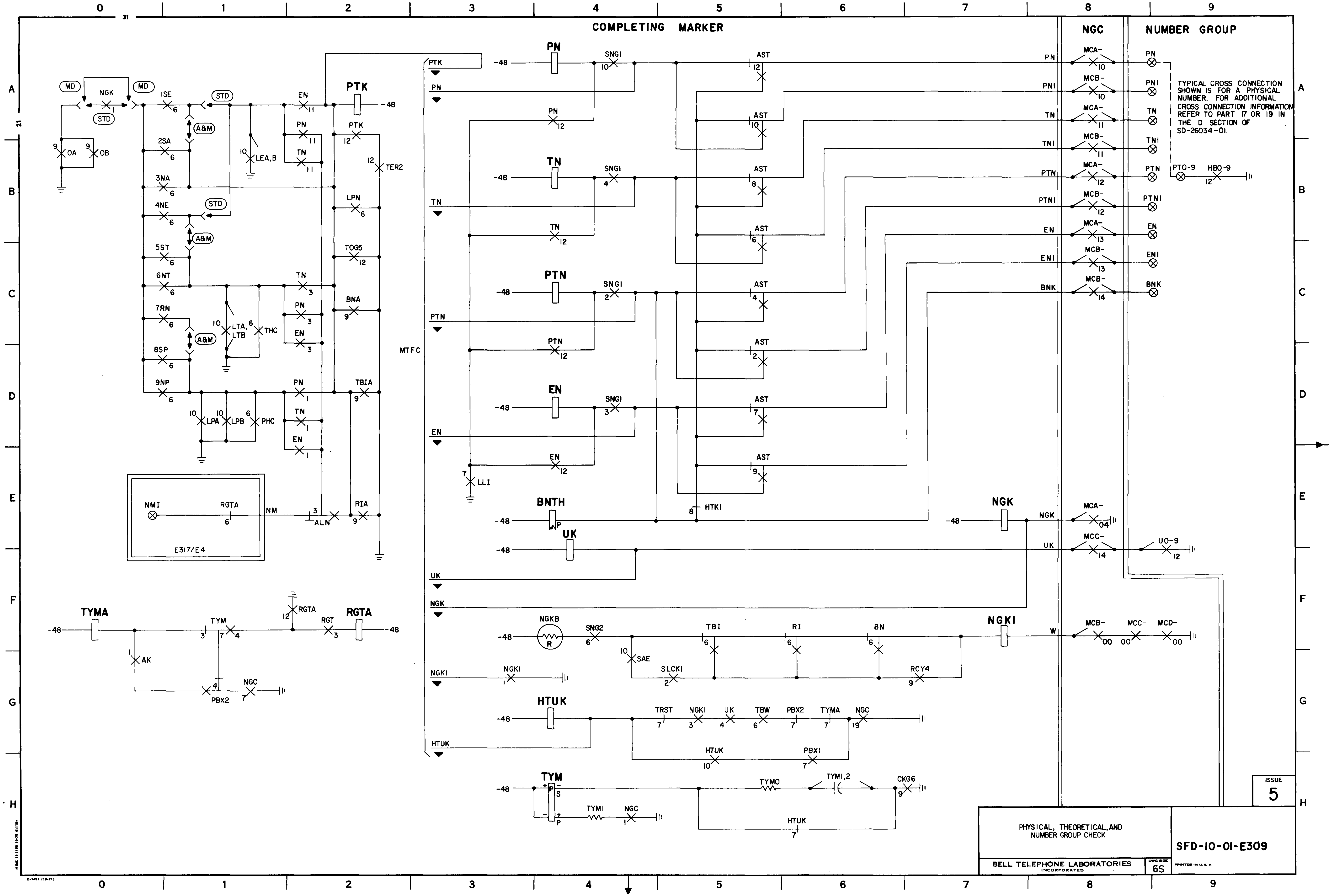
E-7421-L (4-73)



TYPICAL CROSS CONNECTION SHOWN IS FOR A PHYSICAL NUMBER. FOR ADDITIONAL CROSS CONNECTION INFORMATION REFER TO PART 17 OR 19 IN THE D SECTION OF SD-26034-01.

ISSUE
5

PHYSICAL, THEORETICAL, AND NUMBER GROUP CHECK

SFD-10-01-E309

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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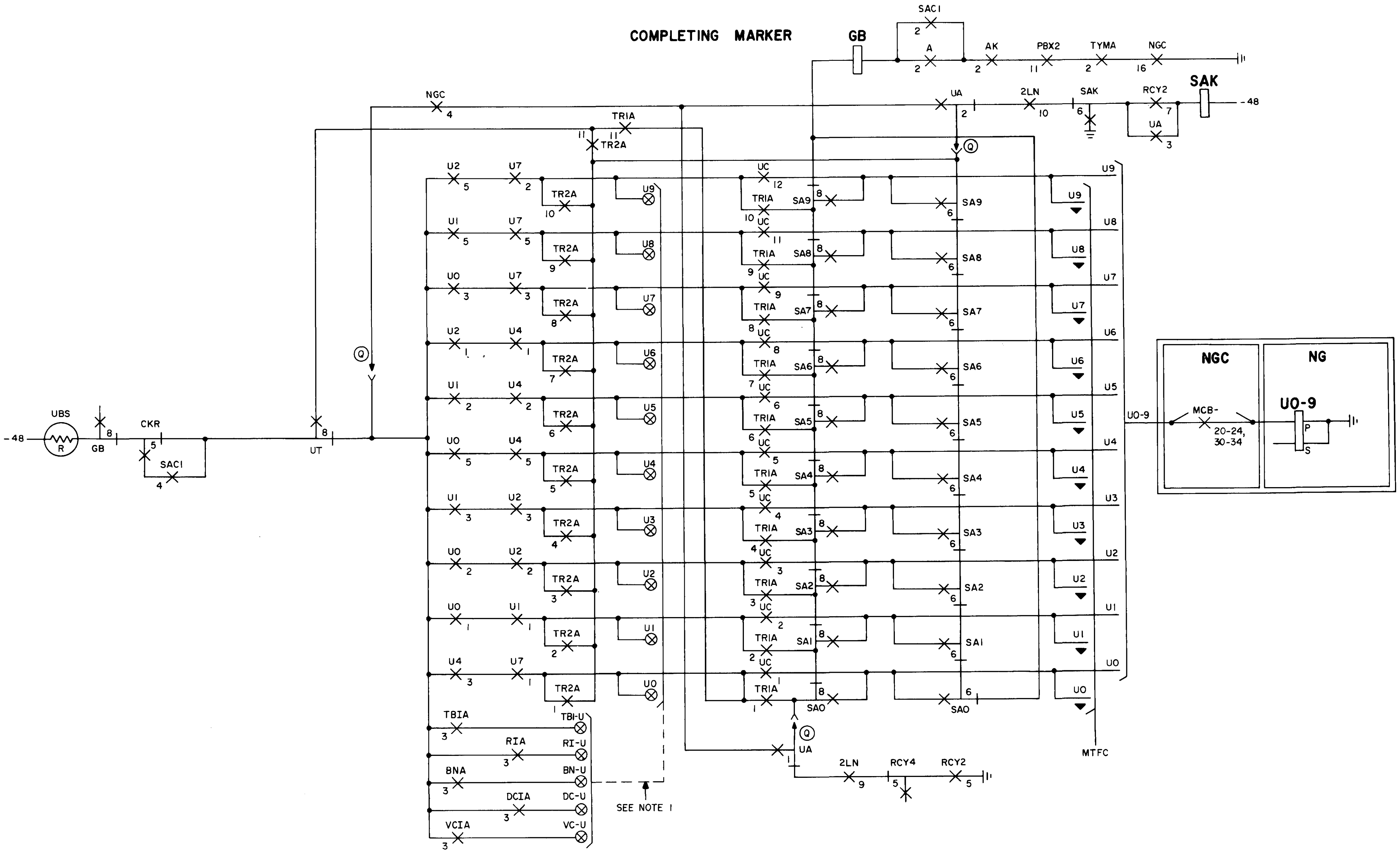
SFD-10-01-E309



SHEET NOTES:

1. CROSS CONNECT PER OFFICE RECORD FOR ASSIGNMENT OF INTERCEPT TRUNK ON LINE LINK FRAME.
2. OPTION ASSIGNMENTS:

Ⓠ TWO LINE NUMBER FEATURE.

UNITS DIGIT CONTROL

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SFD-10-01-E311

ISSUE
5

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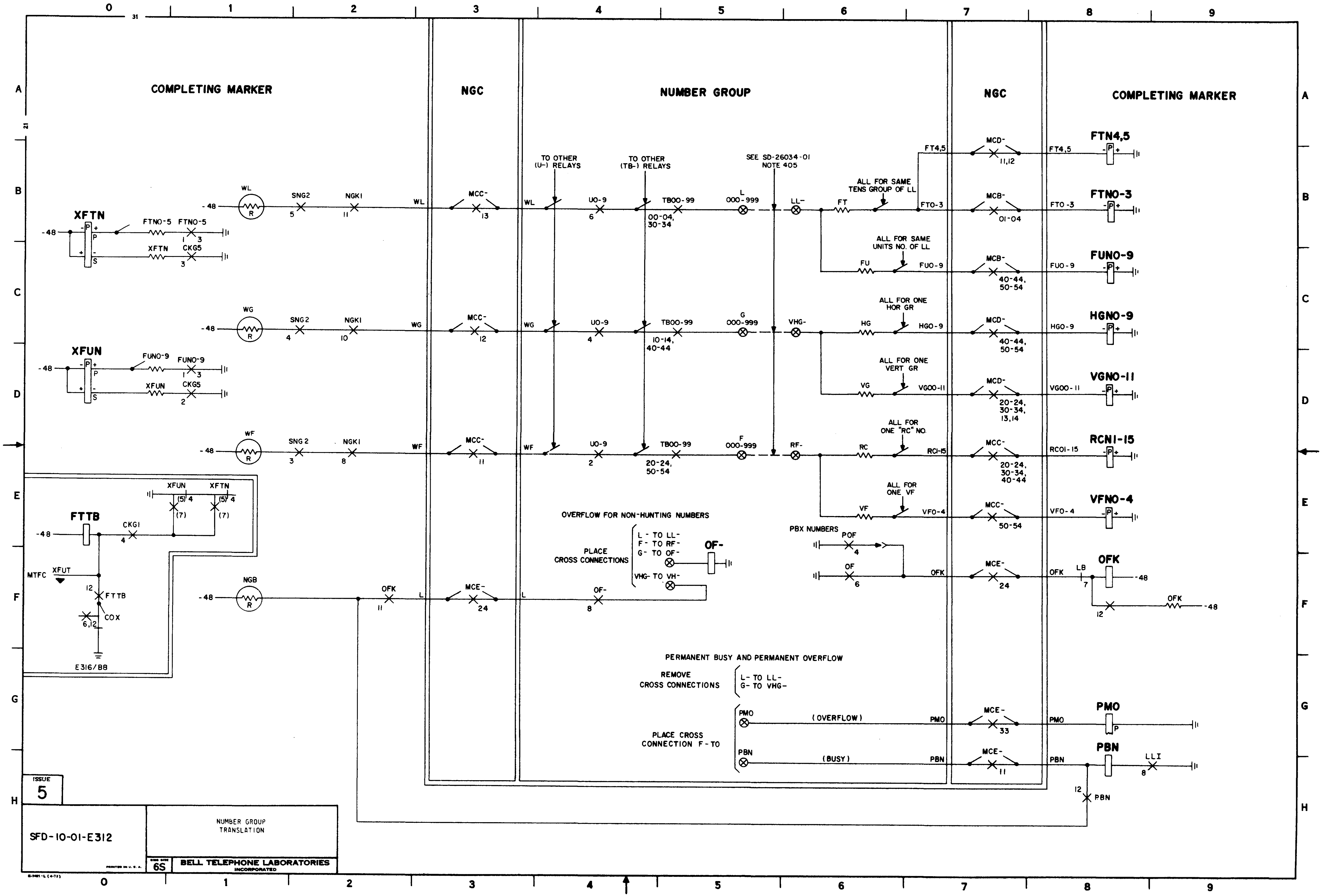


ISSUE
5

SFD-10-01-E312

NUMBER GROUP
TRANSLATION

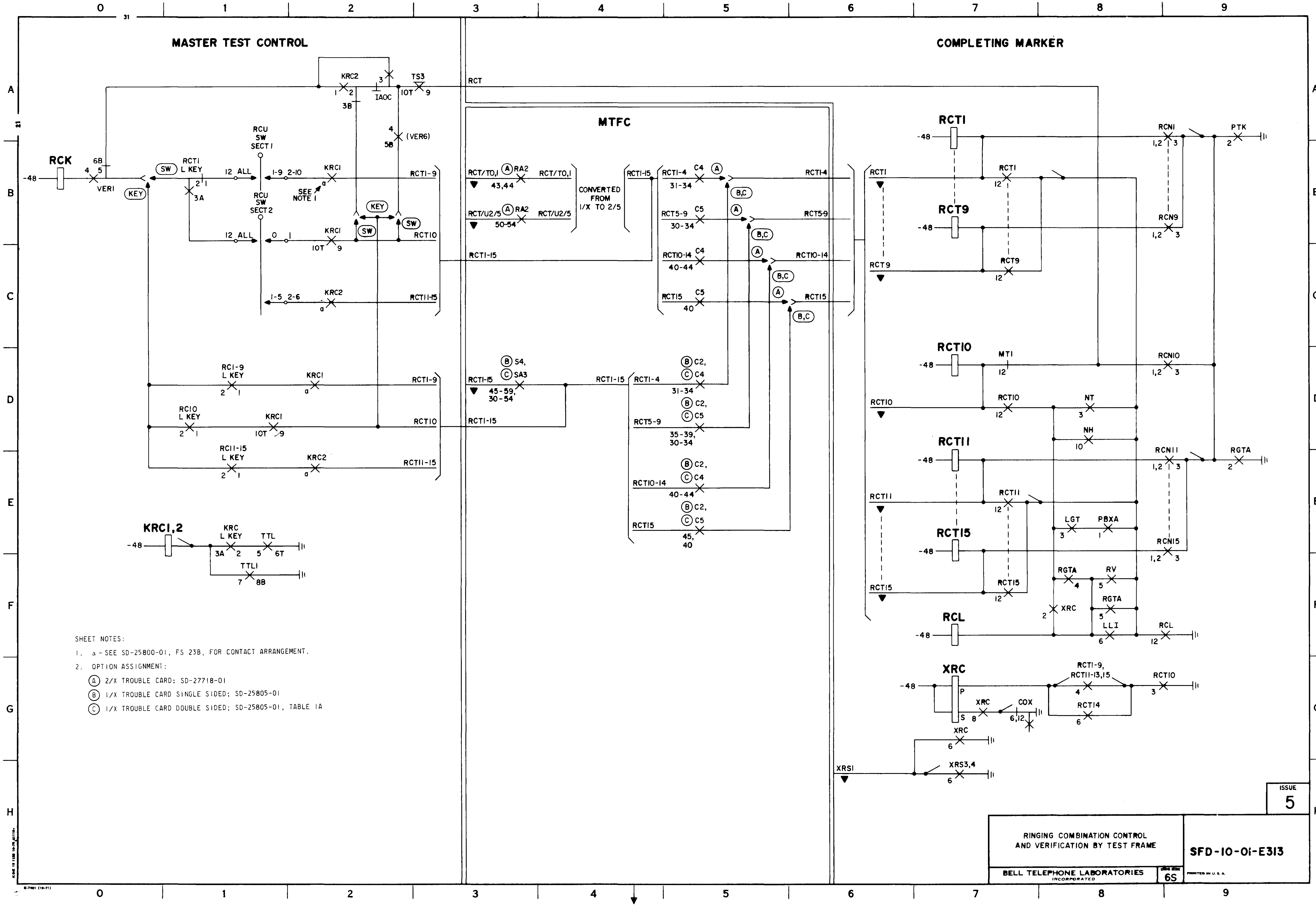
PRINTED IN U. S. A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7421-L (4-73)

SFD-10-01-E312



SHEET NOTES:

1. a - SEE SD-25800-01, FS 23B, FOR CONTACT ARRANGEMENT.
2. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

ISSUE
5

RINGING COMBINATION CONTROL
AND VERIFICATION BY TEST FRAME

SFD-10-01-E313

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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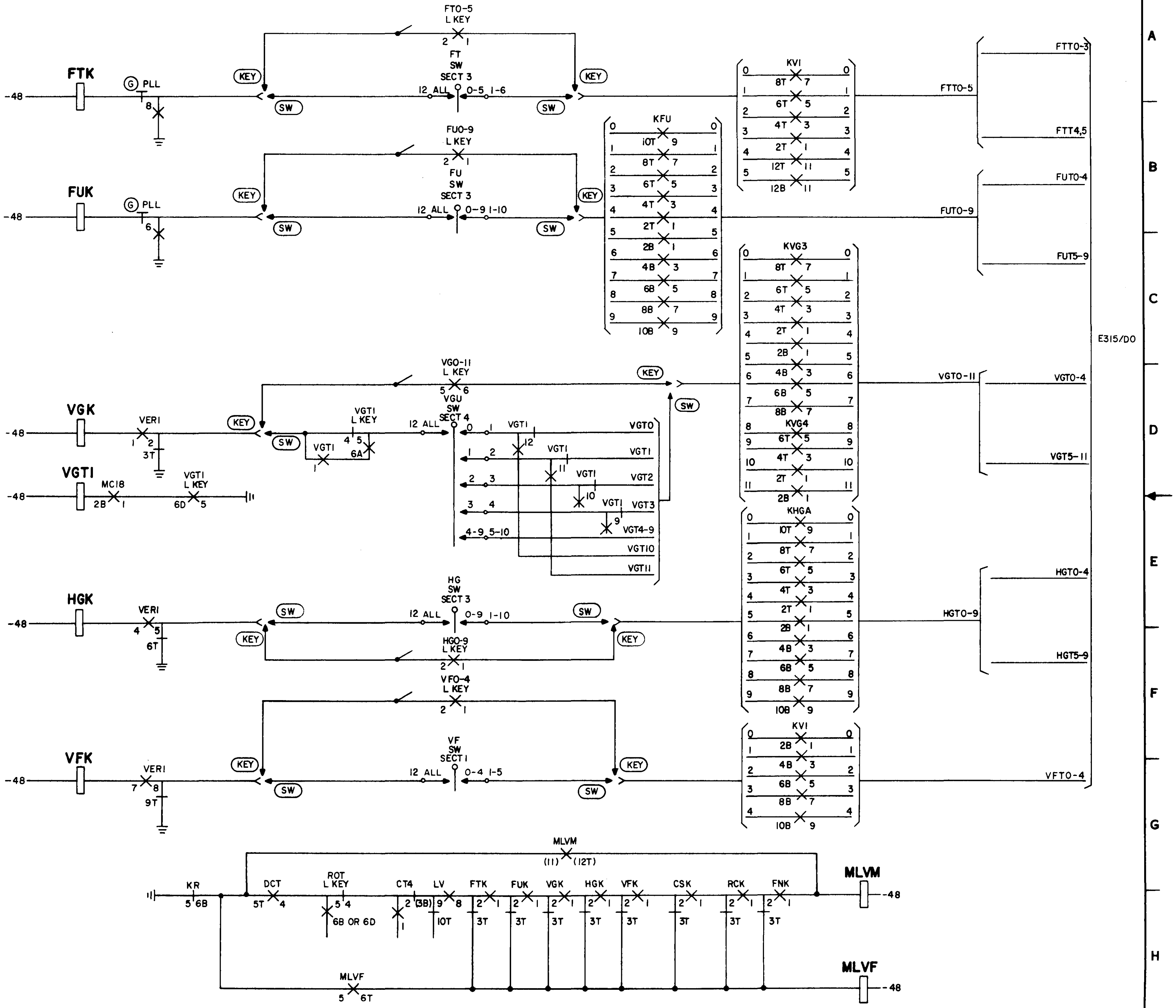
SFD-10-01-E313

MASTER TEST CONTROL



SHEET NOTES:
1. OPTION ASSIGNMENT:
Ⓖ PAIRED LINE LINK FRAMES

ISSUE 5	
SFD-10-01-E314	LINE VERIFICATION MATCH
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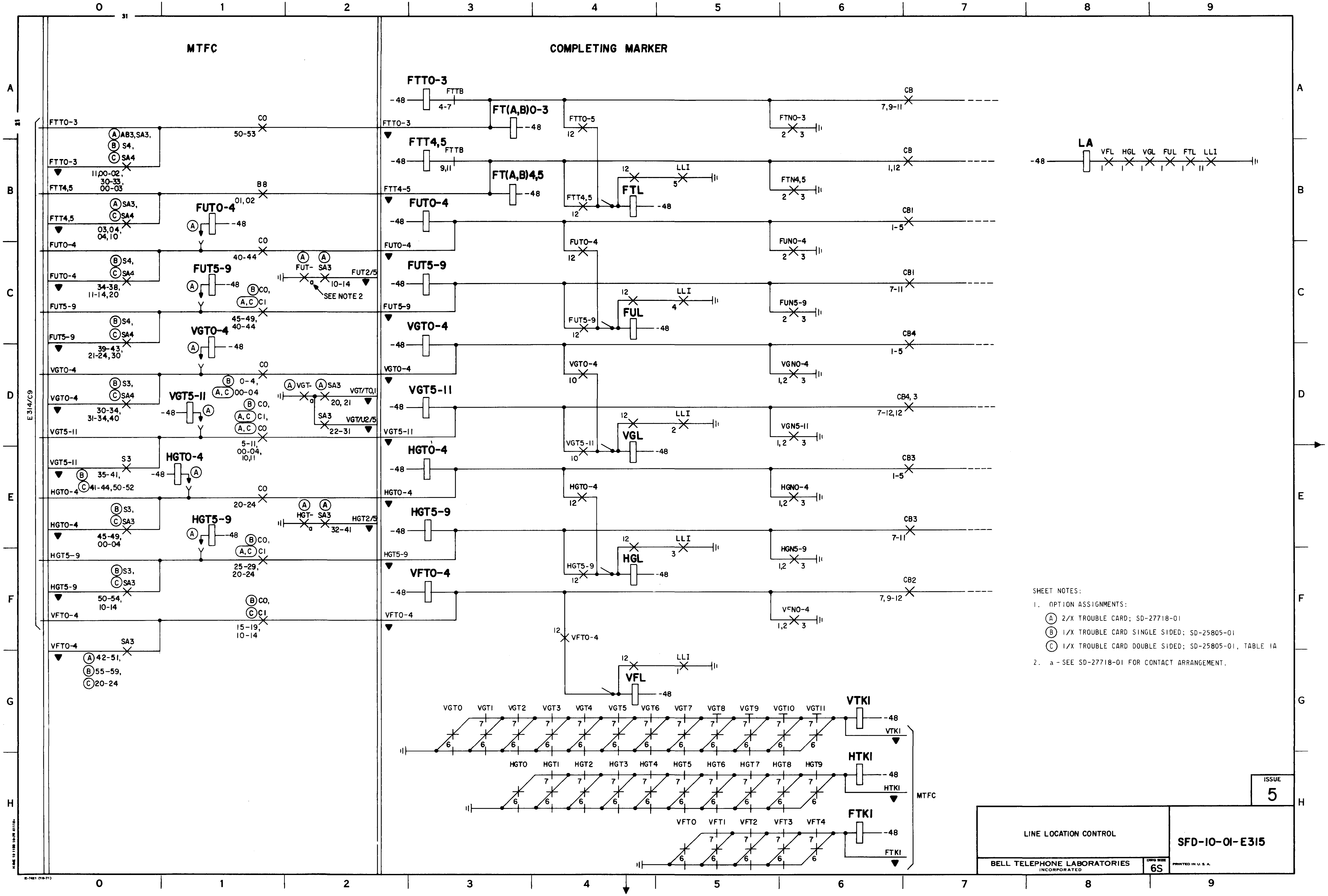
E-7481-L (4-73)

SFD-10-01-E314



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
2. a - SEE SD-27718-01 FOR CONTACT ARRANGEMENT.

ISSUE
5

LINE LOCATION CONTROL

SFD-10-01-E315

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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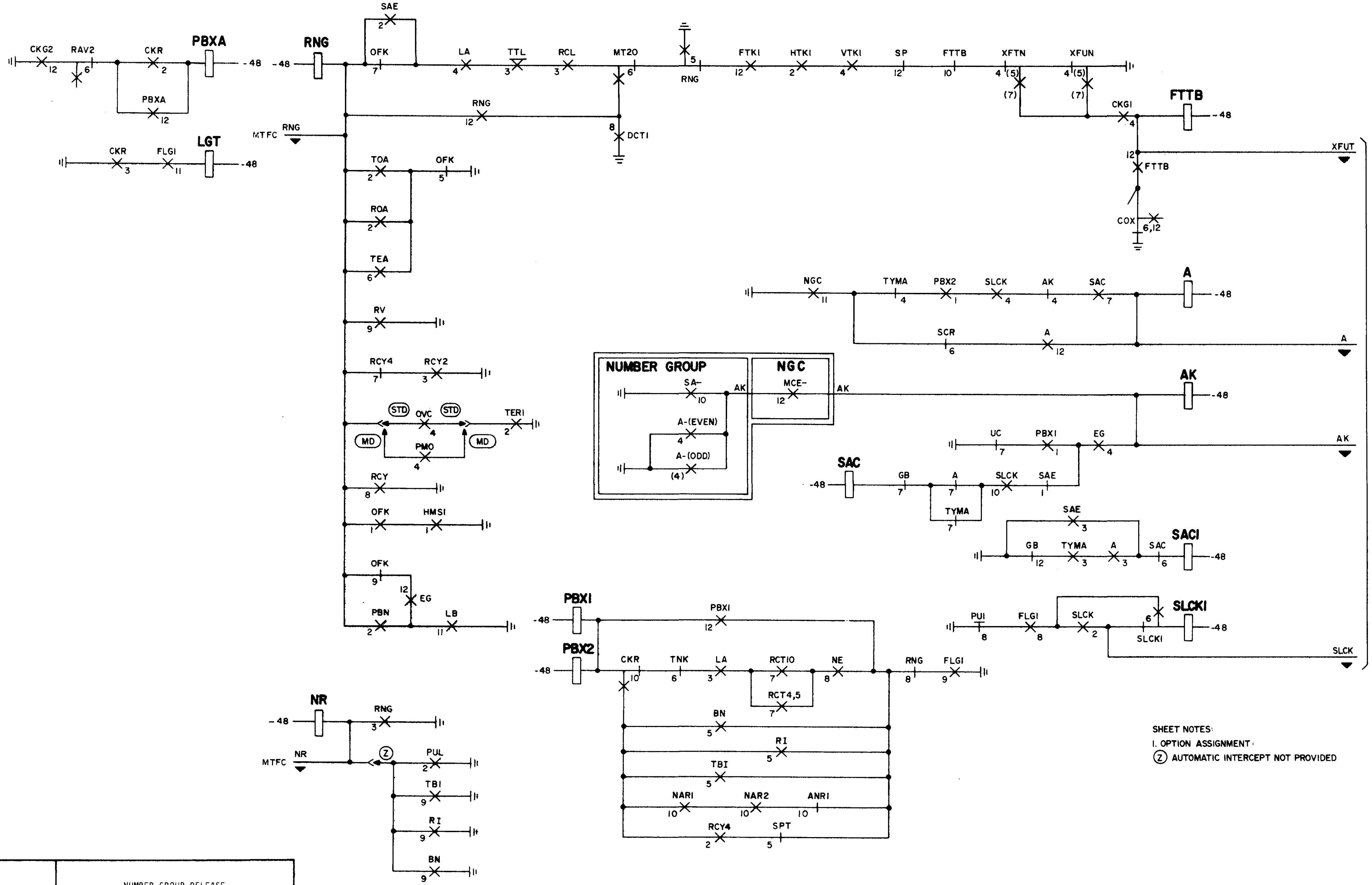
SFD-10-01-E315

COMPLETING MARKER



SHEET NOTES:
1. OPTION ASSIGNMENT:
Ⓩ AUTOMATIC INTERCEPT NOT PROVIDED

ISSUE
5

SFD-10-01-E316

NUMBER GROUP RELEASE
CONTROL

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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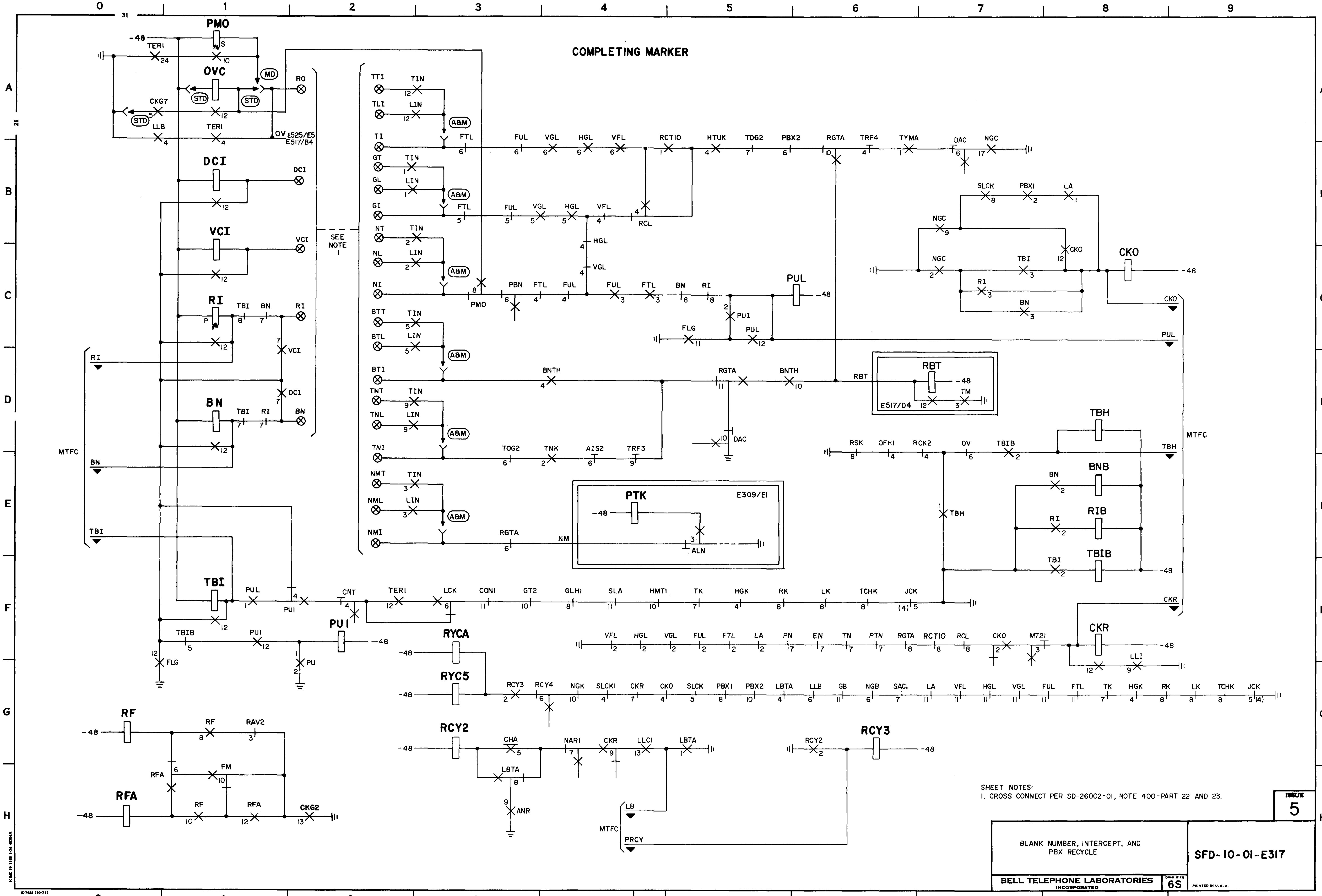
E-7481-L (4-72)

SFD-10-01-E316

COMPLETING MARKER



SHEET NOTES:
1. CROSS CONNECT PER SD-26002-01, NOTE 400-PART 22 AND 23.

ISSUE
5

BLANK NUMBER, INTERCEPT, AND
PBX RECYCLE

SFD-10-01-E317

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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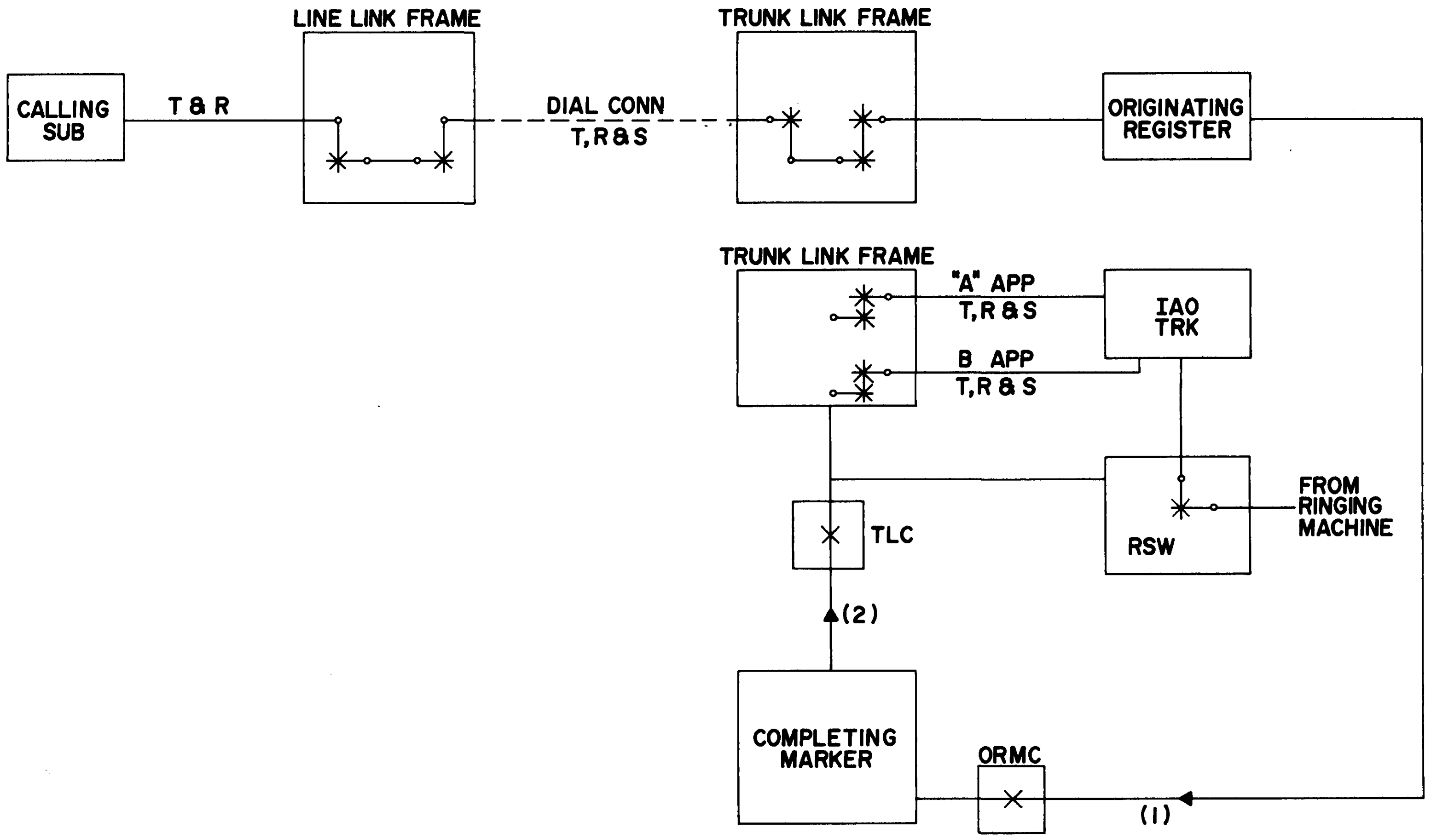
E-7421 (10-71)

SFD-10-01-E317

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



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E403	RESERVED
E404	LINE LINK FRAME SEIZURE
E405	LINE LINK FRAME SEIZURE
E406	RESERVED
E407	LINE LINK FRAME CONTROLS NON-PAIRED OPERATION
E408	PAIRED LINE LINK FRAMES AUXILIARY LINE LINK FRAME SEIZURE
E409	PAIRED LINE LINK FRAMES AUXILIARY LINE LINK CONTROL
E410	20, 30, 60 CLASSES OF SERVICE LINE VERIFICATION TEST AND INPUT TO COMPLETING MARKER
E411	100 CLASSES OF SERVICE LINE VERIFICATION TEST AND INPUT TO COMPLETING MARKER

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

SFD-10-01-E401
2 SHEETS, SHEET 1

ISSUE
5

PART E4
CONNECTION TO LINE LINK
(FLG)

SFD-10-01-E401

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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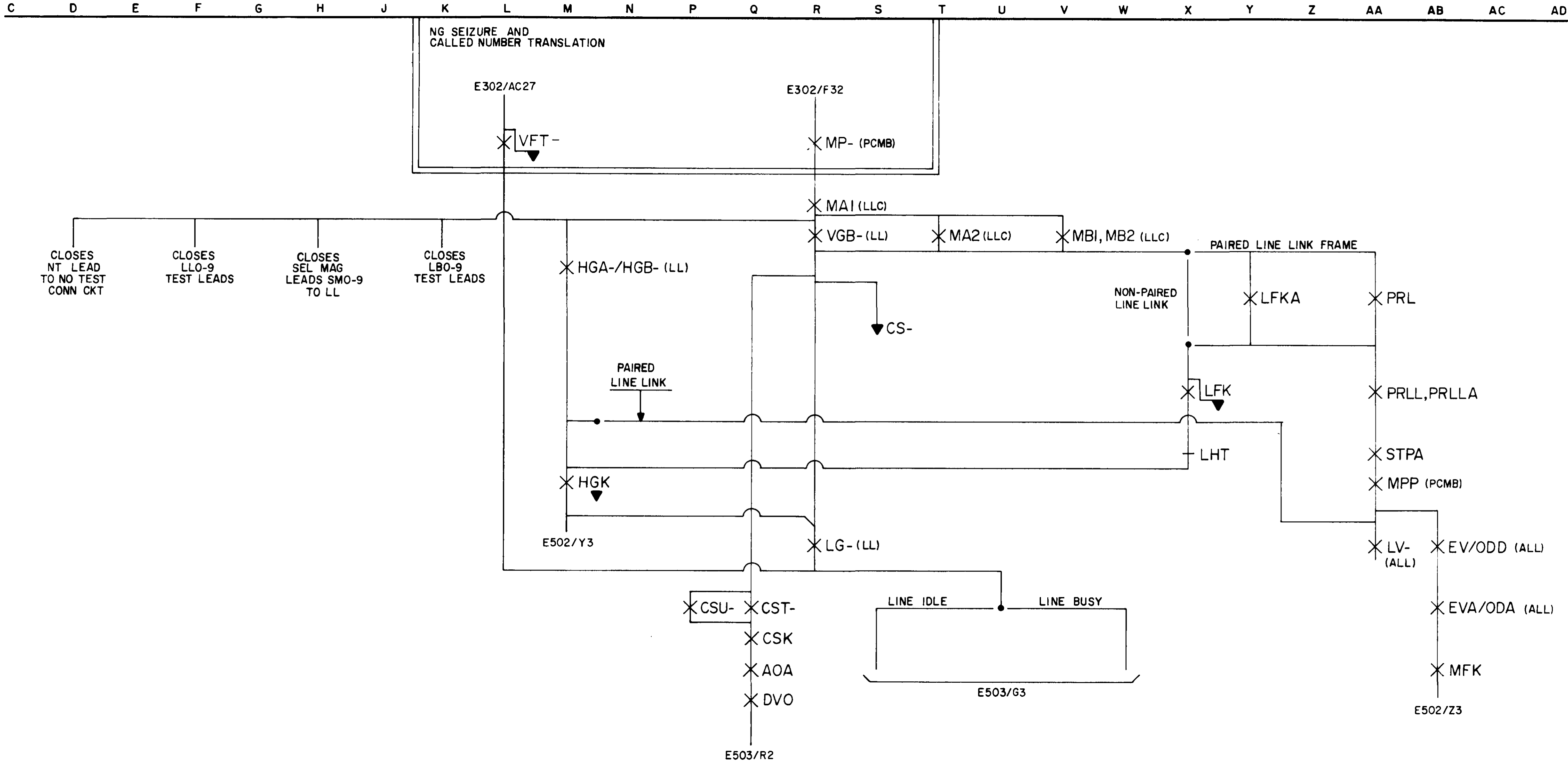

ISSUE
5

SFD-10-01-E402

SEQUENCE CHART
CONNECTION TO LINE LINK
(FLG)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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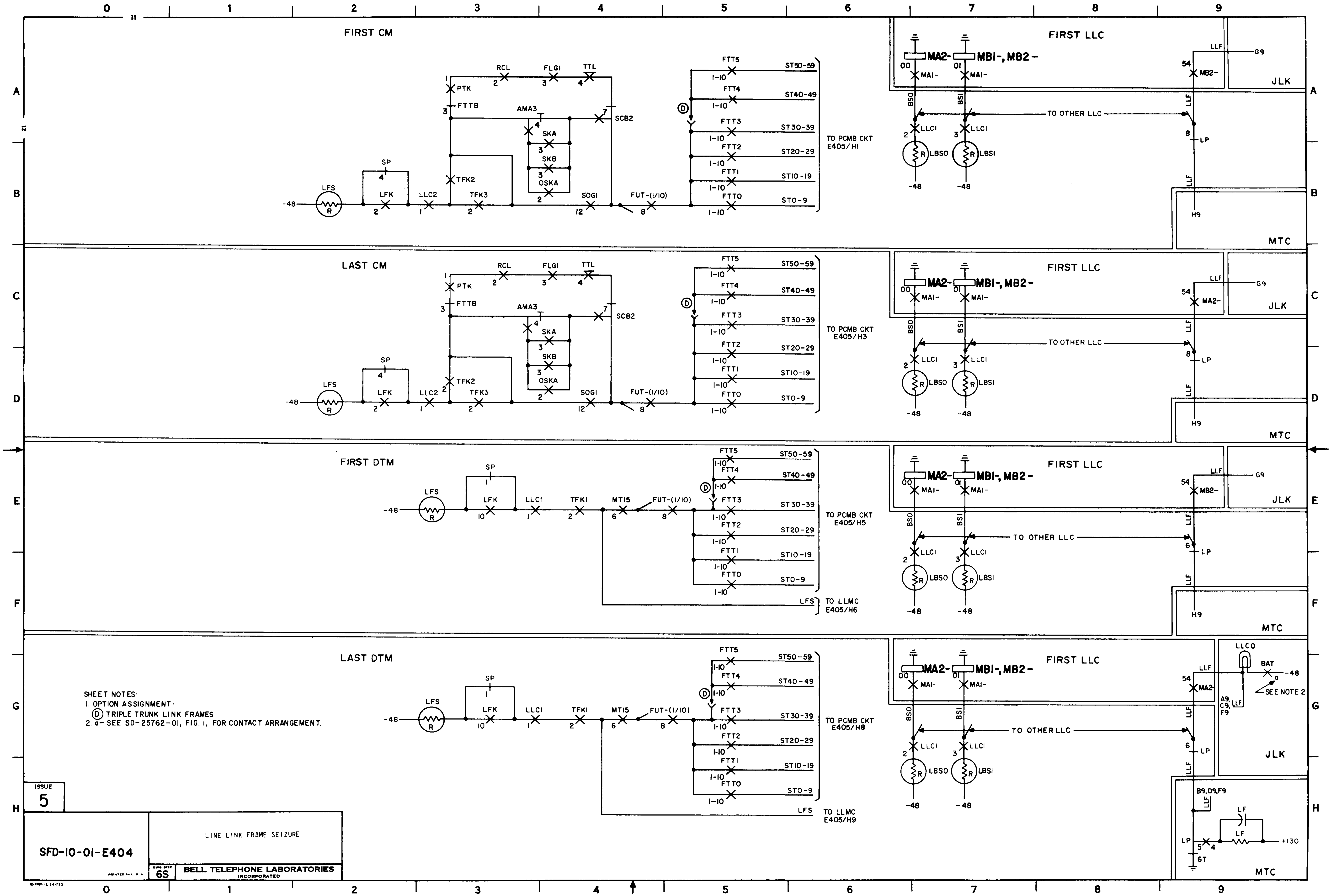
E-7481-L (4-73)

SFD-10-01-E402



SHEET NOTES:
1. OPTION ASSIGNMENT:
Ⓓ TRIPLE TRUNK LINK FRAMES
2. a- SEE SD-25762-01, FIG. 1, FOR CONTACT ARRANGEMENT.

ISSUE
5

SFD-10-01-E404

LINE LINK FRAME SEIZURE

DWG SIZE 6S

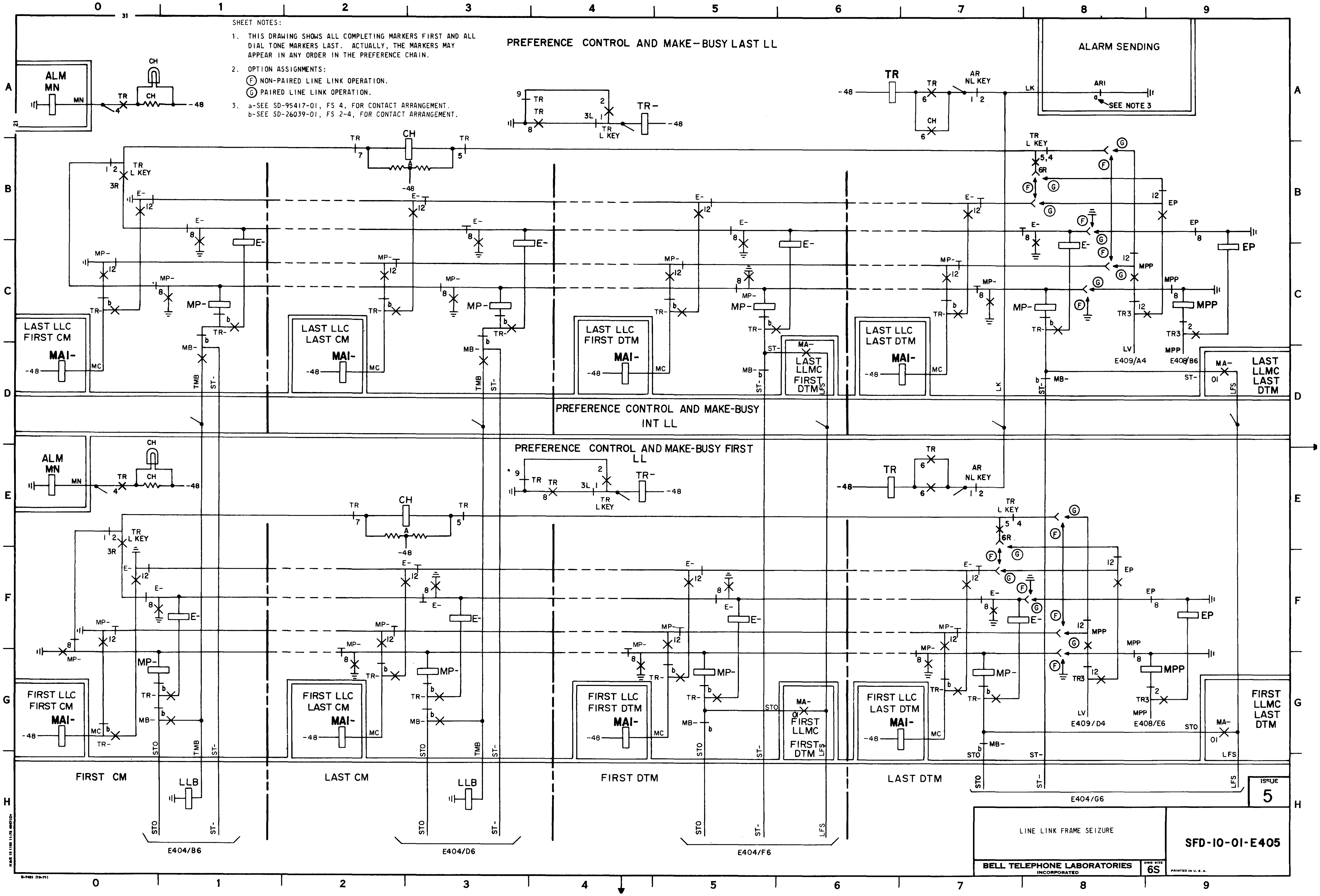
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

SFD-10-01-E404

SHEET NOTES:

1. THIS DRAWING SHOWS ALL COMPLETING MARKERS FIRST AND ALL DIAL TONE MARKERS LAST. ACTUALLY, THE MARKERS MAY APPEAR IN ANY ORDER IN THE PREFERENCE CHAIN.
2. OPTION ASSIGNMENTS:
   - Ⓕ NON-PAIRED LINE LINK OPERATION.
   - Ⓖ PAIRED LINE LINK OPERATION.
3. a-SEE SD-95417-01, FS 4, FOR CONTACT ARRANGEMENT.
   b-SEE SD-26039-01, FS 2-4, FOR CONTACT ARRANGEMENT.



ISSUE 5

LINE LINK FRAME SEIZURE

SFD-10-01-E405

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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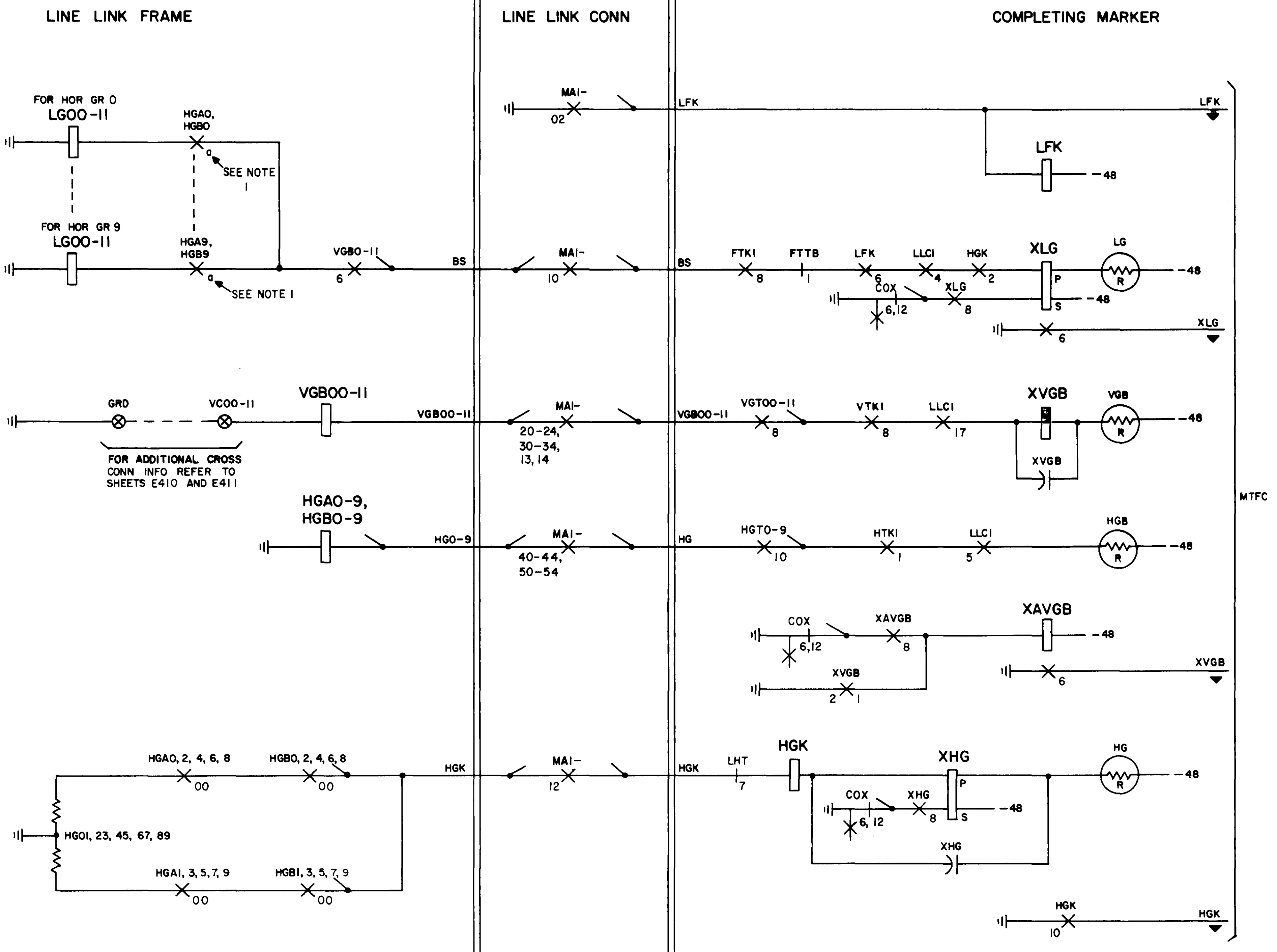
SFD-10-01-E405



SHEET NOTES:
1. a- SEE SD-26030-01, FS 2, FOR CONTACT ARRANGMENTS.

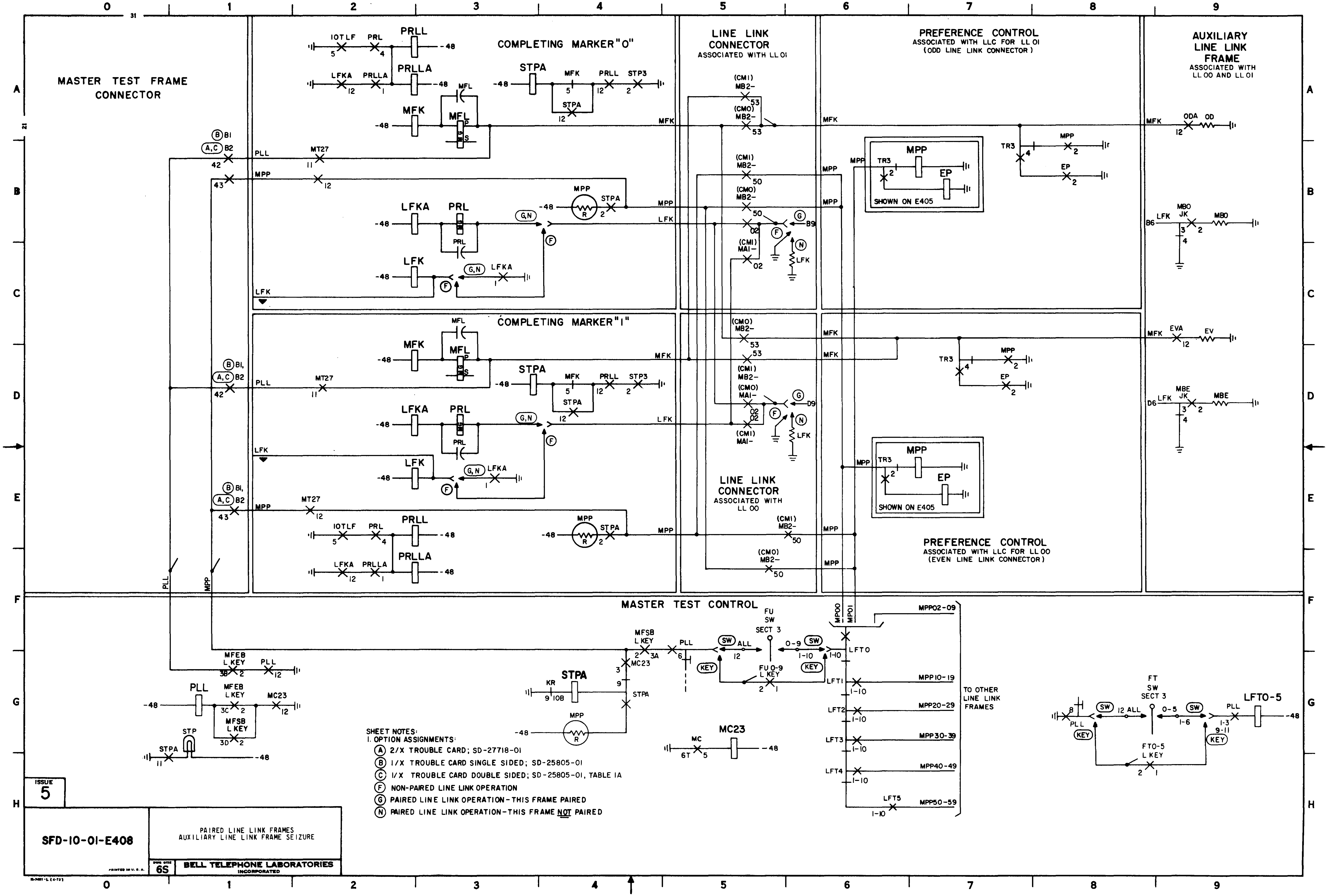
LINE LINK FRAME CONTROLS
NON-PAIRED OPERATION

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

ISSUE 5

SFD-10-01-E407


MASTER TEST FRAME CONNECTOR
COMPLETING MARKER "0"
COMPLETING MARKER "1"
LINE LINK CONNECTOR ASSOCIATED WITH LL 01
LINE LINK CONNECTOR ASSOCIATED WITH LL 00
PREFERENCE CONTROL ASSOCIATED WITH LLC FOR LL 01 (ODD LINE LINK CONNECTOR)
PREFERENCE CONTROL ASSOCIATED WITH LLC FOR LL 00 (EVEN LINE LINK CONNECTOR)
AUXILIARY LINE LINK FRAME ASSOCIATED WITH LL 00 AND LL 01
MASTER TEST CONTROL
PRLL
PRLLA
MFK
MFL
STPA
LFKA
PRL
LFK
MPP
EP
SHOWN ON E405
TR3
MBO
MBE
ODA
OD
EVA
EV
MT27
PLL
MFEB L KEY
MFSB L KEY
MC23
STP
KR
FU SW SECT 3
FU 0-9 L KEY
LFT0
LFT1
LFT2
LFT3
LFT4
LFT5
MPP02-09
MPP10-19
MPP20-29
MPP30-39
MPP40-49
MPP50-59
TO OTHER LINE LINK FRAMES
FT SW SECT 3
FTO-5 L KEY
LFTO-5
-48

SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
Ⓕ NON-PAIRED LINE LINK OPERATION
Ⓖ PAIRED LINE LINK OPERATION - THIS FRAME PAIRED
Ⓝ PAIRED LINE LINK OPERATION - THIS FRAME NOT PAIRED

ISSUE
5

SFD-10-01-E408

PAIRED LINE LINK FRAMES
AUXILIARY LINE LINK FRAME SEIZURE

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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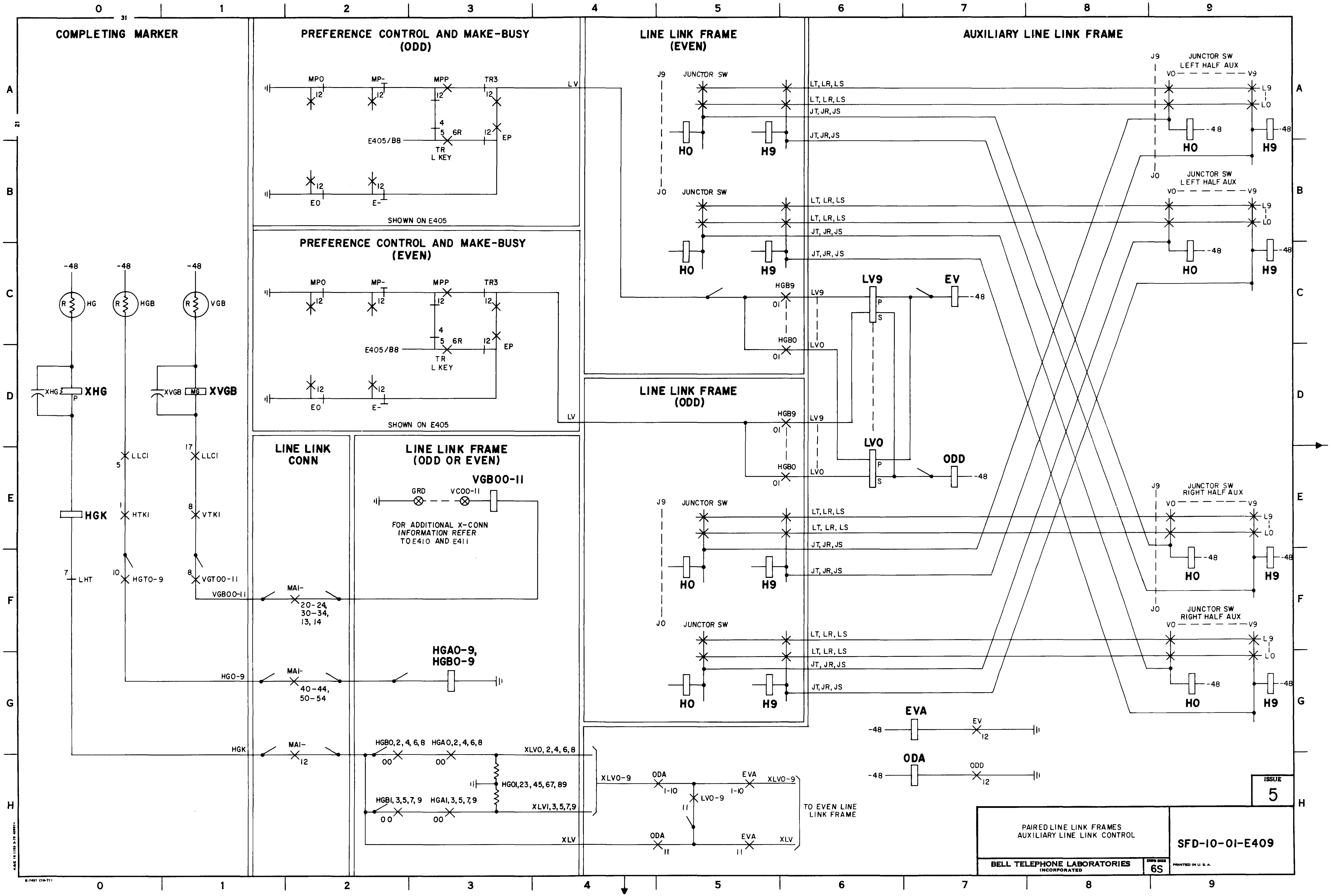
SFD-10-01-E408



ISSUE
5

PAIRED LINE LINK FRAMES
AUXILIARY LINE LINK CONTROL

SFD-10-01-E409

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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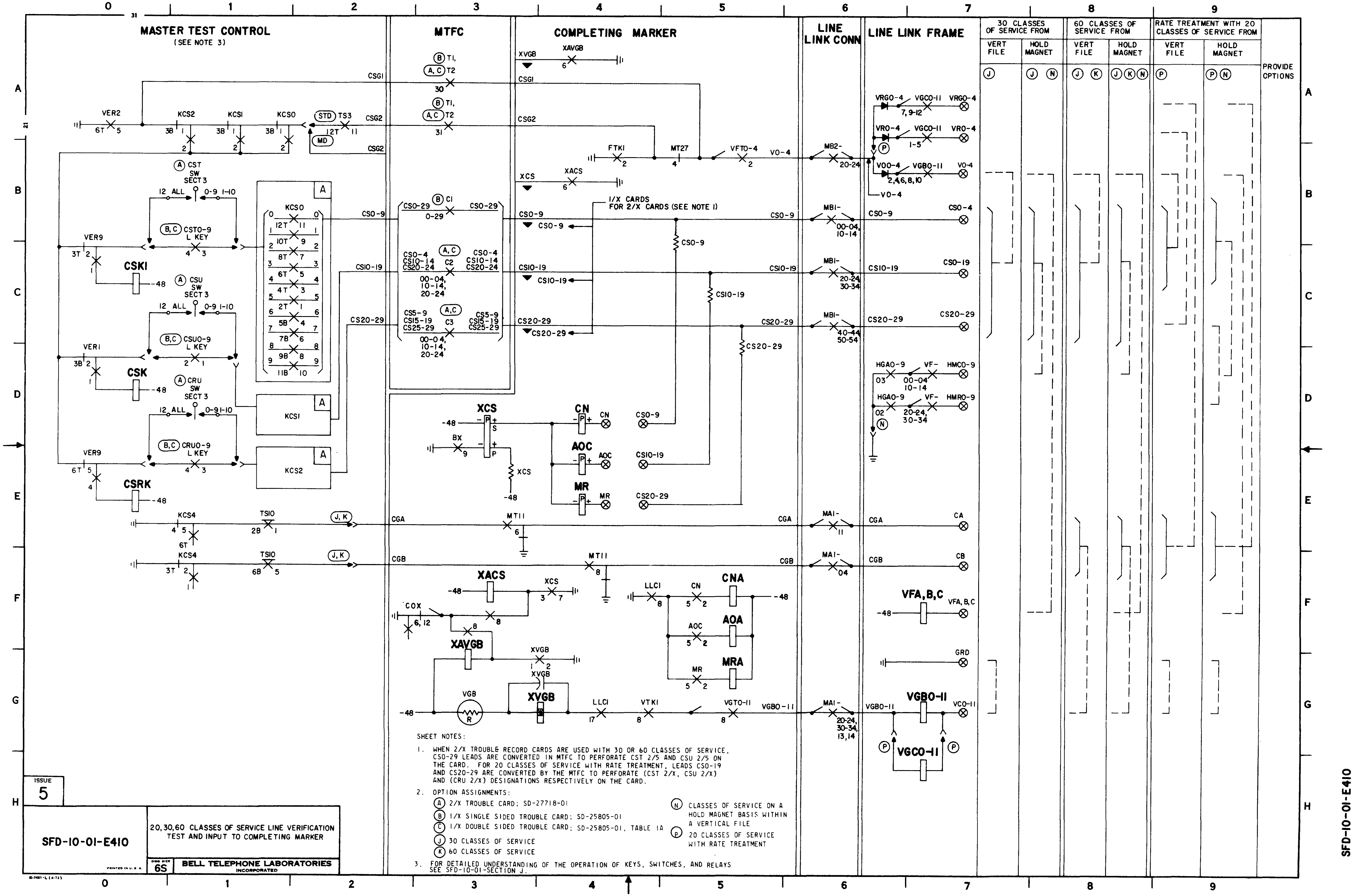
SFD-10-01-E409



SHEET NOTES:

1. WHEN 2/X TROUBLE RECORD CARDS ARE USED WITH 30 OR 60 CLASSES OF SERVICE, CS0-29 LEADS ARE CONVERTED IN MTFC TO PERFORATE CST 2/5 AND CSU 2/5 ON THE CARD. FOR 20 CLASSES OF SERVICE WITH RATE TREATMENT, LEADS CS0-19 AND CS20-29 ARE CONVERTED BY THE MTFC TO PERFORATE (CST 2/X, CSU 2/X) AND (CRU 2/X) DESIGNATIONS RESPECTIVELY ON THE CARD.

2. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X SINGLE SIDED TROUBLE CARD; SD-25805-01
   - Ⓒ 1/X DOUBLE SIDED TROUBLE CARD; SD-25805-01, TABLE 1A
   - Ⓙ 30 CLASSES OF SERVICE
   - Ⓚ 60 CLASSES OF SERVICE
   - Ⓝ CLASSES OF SERVICE ON A HOLD MAGNET BASIS WITHIN A VERTICAL FILE
   - Ⓟ 20 CLASSES OF SERVICE WITH RATE TREATMENT

3. FOR DETAILED UNDERSTANDING OF THE OPERATION OF KEYS, SWITCHES, AND RELAYS SEE SFD-10-01-SECTION J.

ISSUE
5

SFD-10-01-E410

20,30,60 CLASSES OF SERVICE LINE VERIFICATION
TEST AND INPUT TO COMPLETING MARKER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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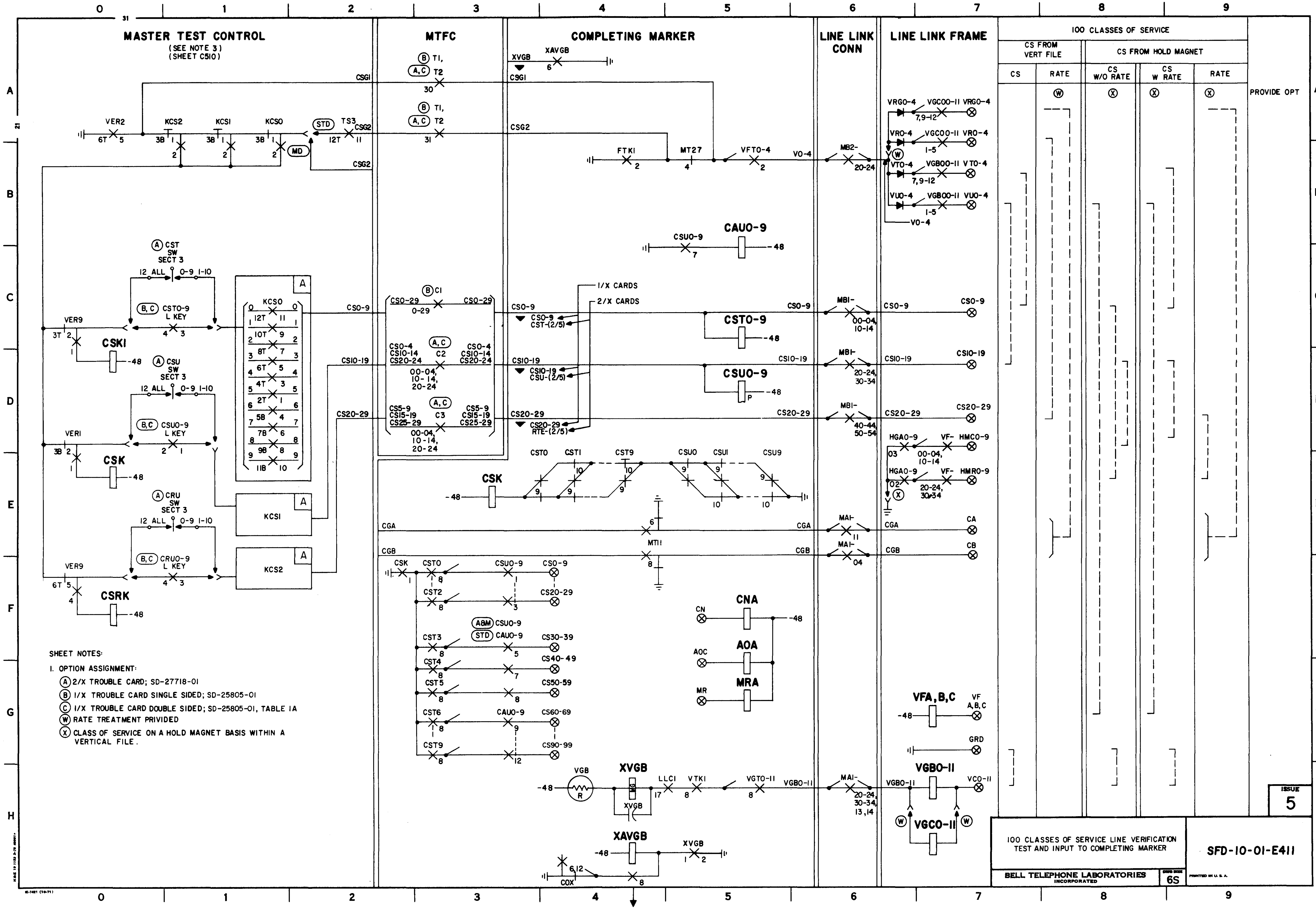
E-7481-L (4-73)

SFD-10-01-E410



SHEET NOTES:

1. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓦ RATE TREATMENT PRIVIDED
   - Ⓧ CLASS OF SERVICE ON A HOLD MAGNET BASIS WITHIN A VERTICAL FILE.

ISSUE 5

100 CLASSES OF SERVICE LINE VERIFICATION TEST AND INPUT TO COMPLETING MARKER

SFD-10-01-E411

BELL TELEPHONE LABORATORIES INCORPORATED

6S

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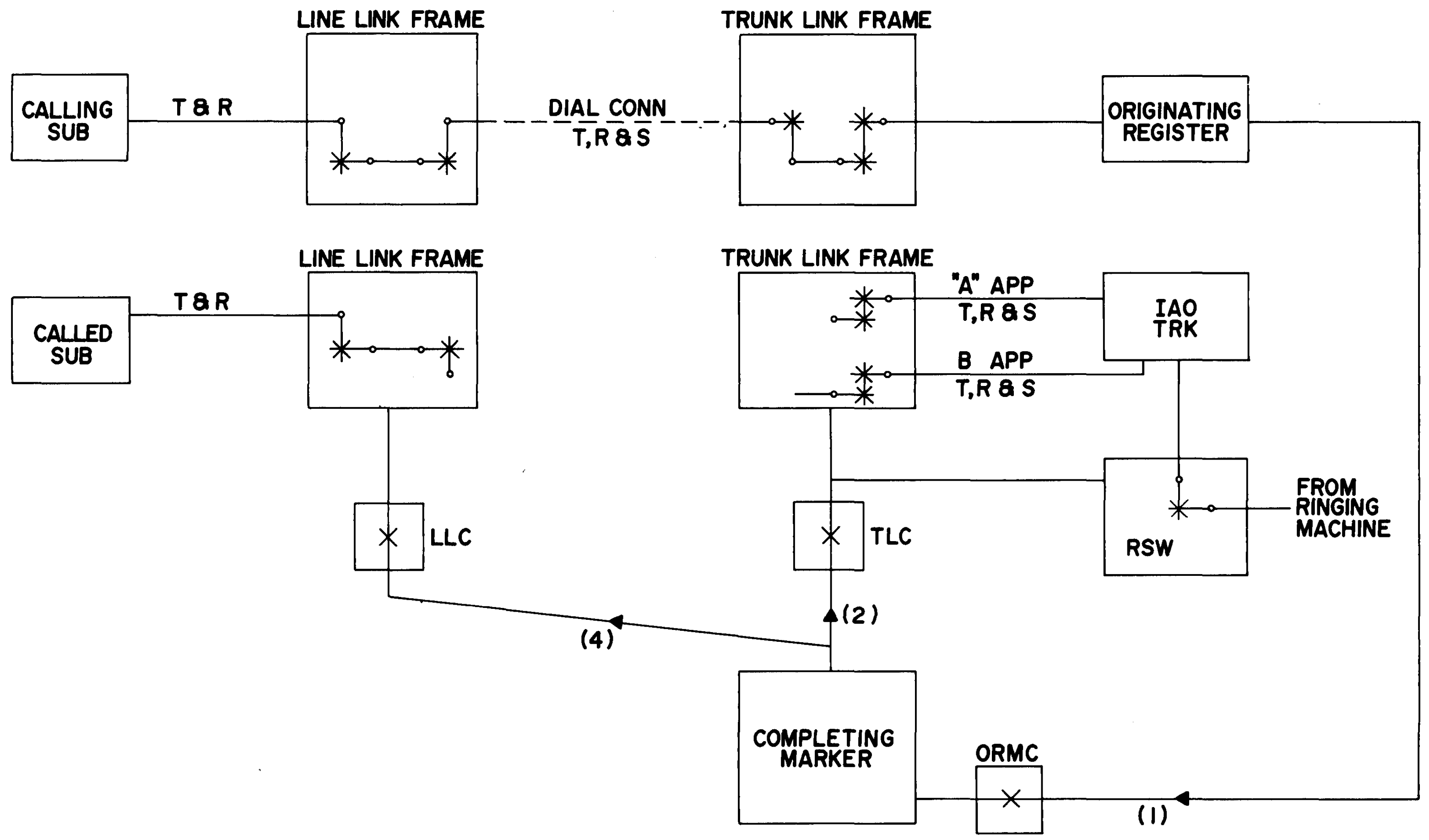
SFD-10-01-E411

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



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E505	JUNCTOR PATTERN TENS CONTROL
E506	SEQUENCE CHART JUNCTOR SEQUENCE CONTROL
E507	JUNCTOR SEQUENCE CONTROL
E508	JUNCTOR SUBGROUP SELECTION FOR 2,2-3,5, AND 10 TLF SIZES
E509	JUNCTOR SUBGROUP SELECTION FOR 3,4,6,7,8,9, TLF SIZES
E510	JUNCTOR SUBGROUP CONNECTOR RELAYS
E511	RESERVED
E512	FLOW CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
E513	SEQUENCE CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
E514	SEQUENCE CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
E515	SEQUENCE CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
E516	RECYCLE AND ROUTE ADVANCE CONTROL
E517	RECYCLE AND ROUTE ADVANCE
E518	RESERVED
E519	GROUND SUPPLY AND ROUTE ADVANCE
E520	RIGHT OR LEFT, REGULAR, EXTENSION, OR SECOND EXTENSION TRUNK LINK FRAME
E521	JUNCTOR CONNECT RELAYS
E522	COMPLETING MARKER CHANNEL TEST CONTROL
E523	SEQUENCE CHART CONTROL OF CHANNEL SELECTION BY MASTER TEST CONTROL
E524	COMPLETING MARKER CHANNEL TEST AND SELECTION
E525	COMPLETING MARKER CHANNEL TEST AND SELECTION AND FAILURE TO MATCH
E526	LINE LINK FRAME SELECT MAGNET OPERATION
E527	TRUNK LINK FRAME SELECT MAGNET OPERATION (SD-26032-01)
E528	TRUNK LINK FRAME SELECT AND HOLD MAGNET OPERATION (SD-27879-01)
E529	HOLD MAGNET OPERATION
E530	HOLD MAGNET TIMING AND CONTROL
E531	HOLD MAGNET TIMING AND CONTROL
E532	HOLD MAGNET SIMULATION AND CONTROL BY MASTER TEST CONTROL ON ORIG, SDR, MISC OGT IAO AND ITDO CLASSES OF TEST
E533	LINKAGE CHECK AND HOLD MAGNET OPERATION
E534	OPTIONAL ARRANGEMENTS FOR HOLD MAGNET OPERATION
E535	COMPLETING MARKER CONTINUITY AND FALSE CROSS AND GROUND TESTS
E536	RINGING SWITCH CONTROL
E537	RINGING SWITCH CONTROL
E538	RESERVED
E539	NO TEST CONNECTOR

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE
5

PART E5
SET LINKAGE AND SELECT RING
(FLG)

SFD-10-01-E501

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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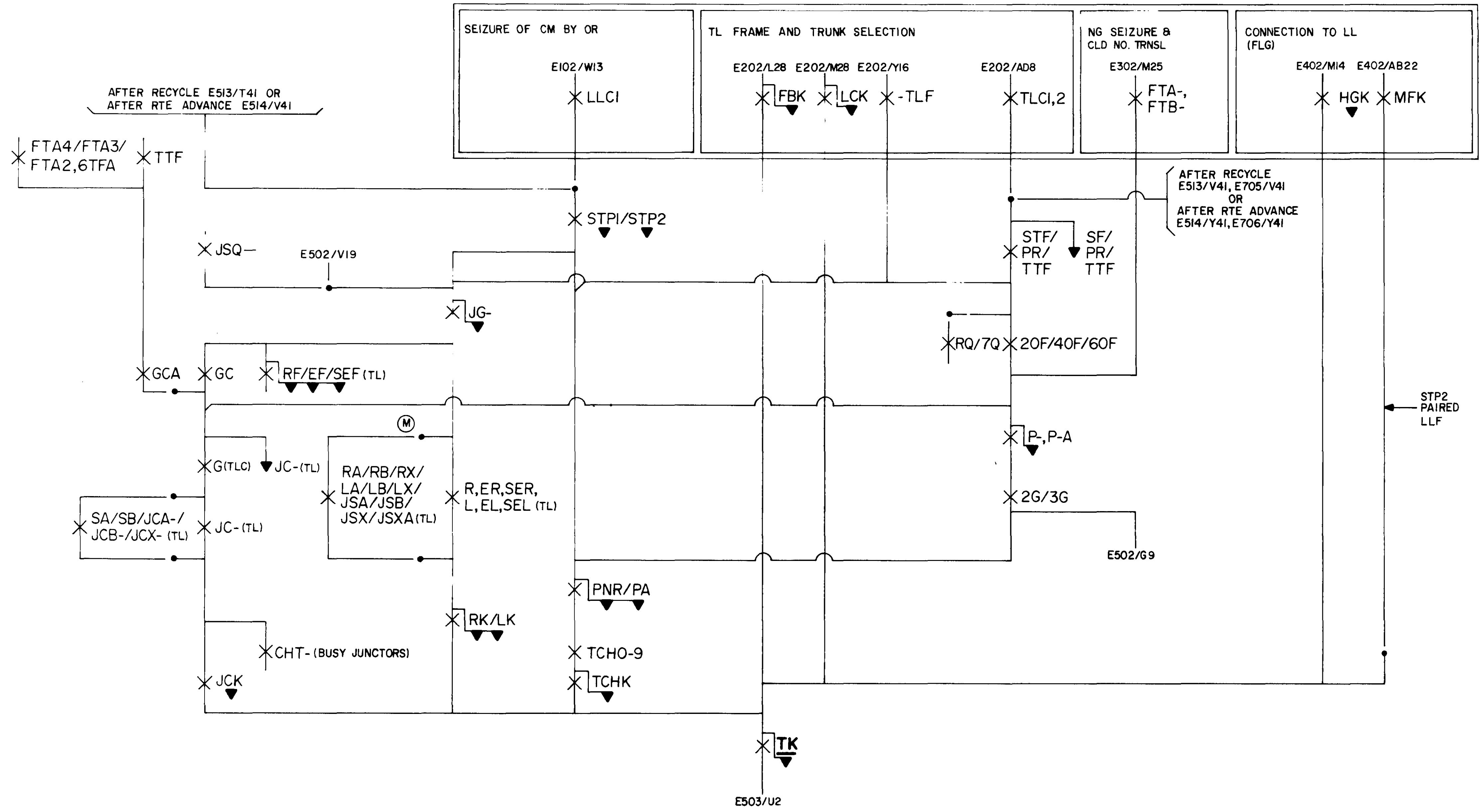
SFD-10-01-E501
2 SHEETS, SHEET 1

E-7481 (10-71)



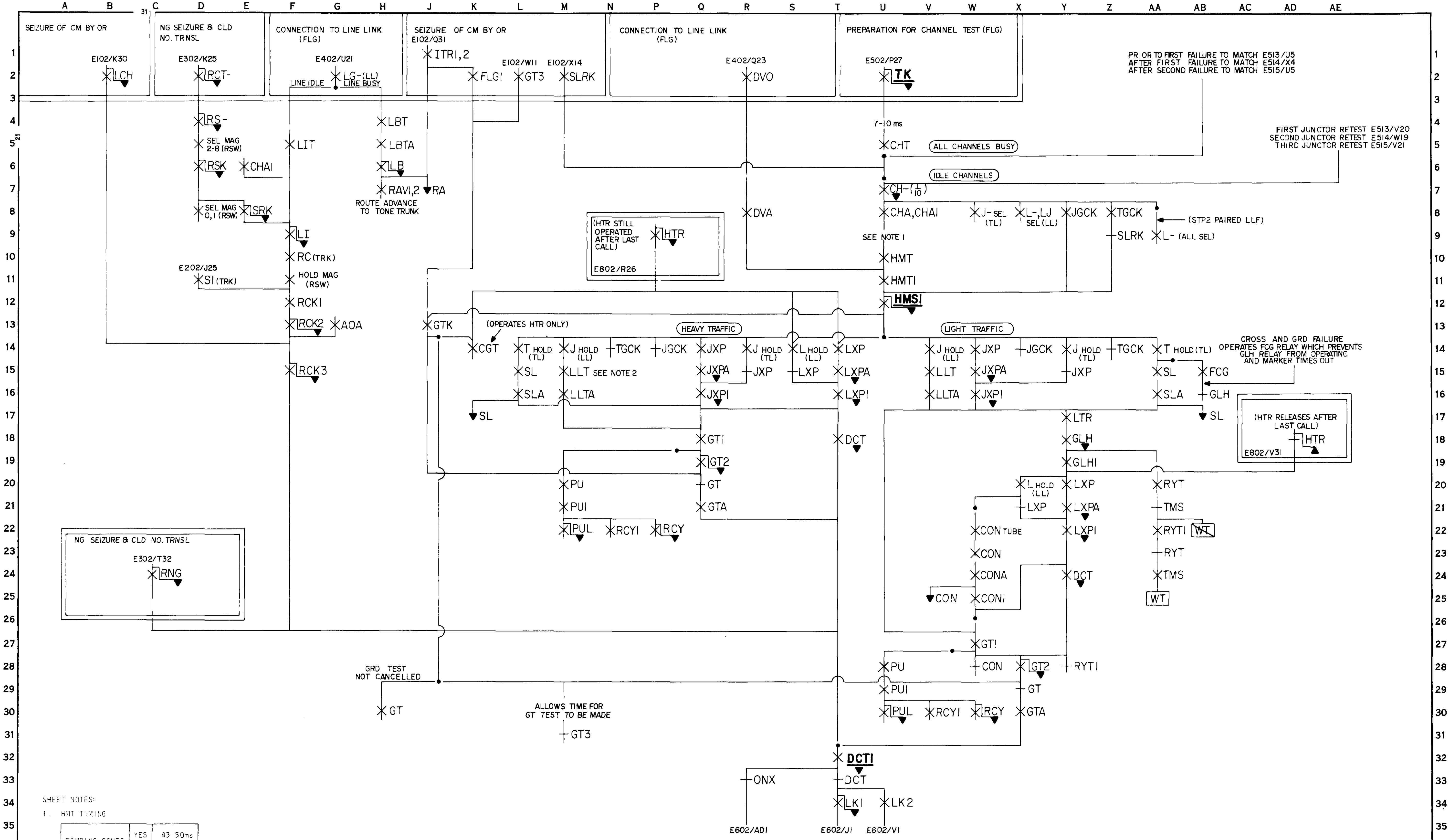
SHEET NOTES:
1. OPTION ASSIGNMENT:
Ⓜ TRUNK LINK FRAME (SD-27879-01).

ISSUE
5

SFD-10-01-E502

SEQUENCE CHART
PREPARATION FOR CHANNEL TEST
(FLG)

PRINTED IN U. S. A.
DWG SIZE 6S
BELL TELEPHONE LABORATORIES
INCORPORATED



SHEET NOTES:

1. HMT TIMING

DAMPING CONES ON ALL FRAMES	YES	43-50ms
	NO	63-75ms

2. THE LLT RELAY OPERATES FROM CLOSURE OF GROUND BY OPERATION OF EITHER THE J OR THE L HOLD MAGNET ON THE LL.

ISSUE
5

SEQUENCE CHART
CHANNEL SELECTION, LINKAGE CHECK,
AND RINGING SWITCH CONTROL
(FLG)

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SFD-10-01-E503

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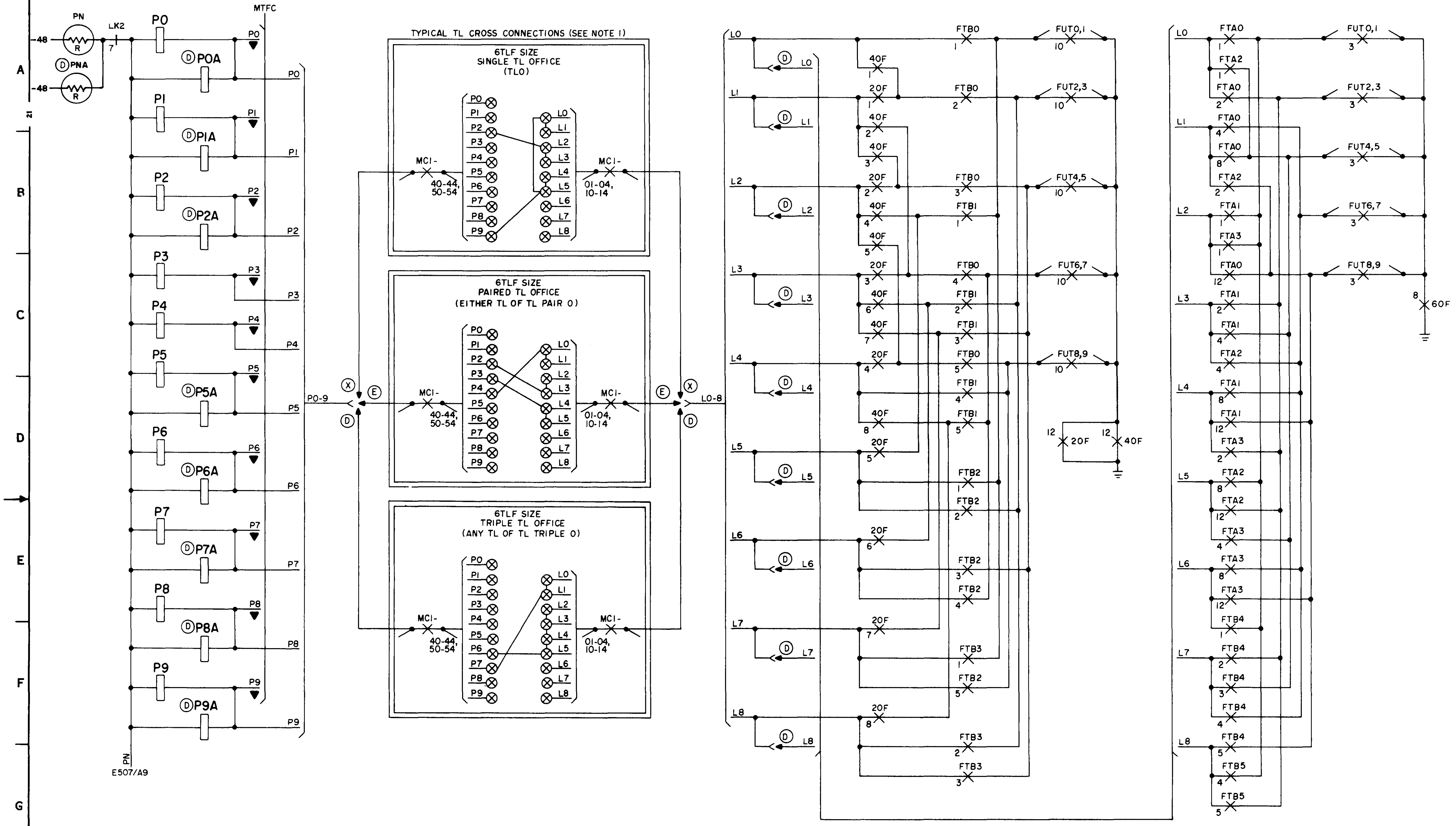
SFD-10-01-E503

BRUNING 44 131 24092

E-7421-B (10-71)

COMPLETING MARKER



SHEET NOTES:

1. TYPICAL TL CROSS CONNECTIONS ARE SHOWN FOR 6TLF SIZE OFFICES WITH SINGLE, PAIRED OR TRIPLE TL. REFER TO BSP 819-220-150 FOR TL CROSS CONNECTIONS FOR ANY SIZE OFFICE.
2. OPTION ASSIGNMENT:

Ⓓ TRIPLE TL OFFICE
Ⓔ PAIRED TL OFFICE
Ⓧ SINGLE TL OFFICE

ISSUE
5

SFD-10-01-E504

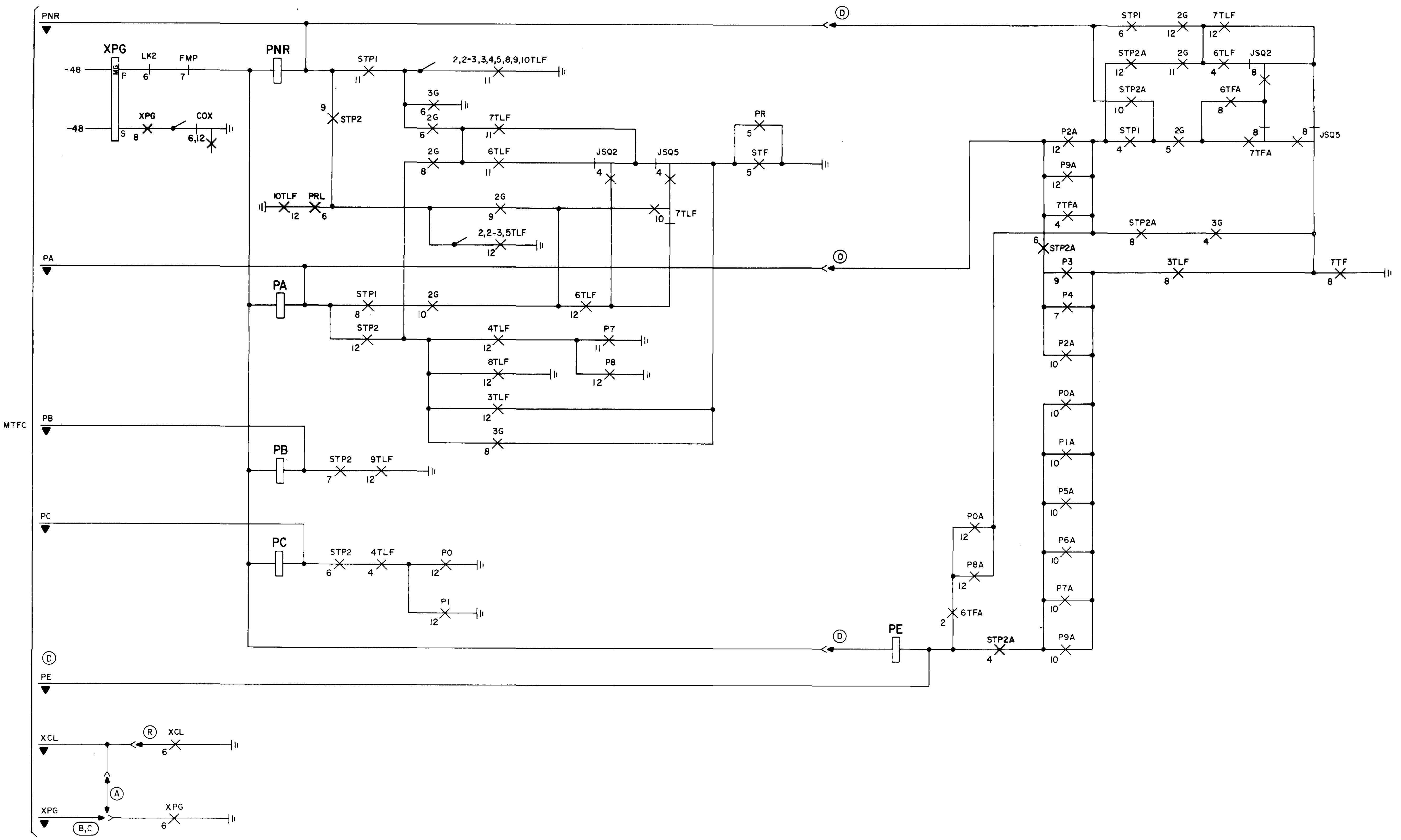
JUNCTOR PATTERN UNITS CONTROL

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E504

COMPLETING MARKER



SHEET NOTES:
1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD: SD-27718-01.
(B,C) 1/X TROUBLE CARDS: SD-25805-01, TABLES 1 & 1A.
Ⓓ TRIPLE TRUNK LINK FRAMES.
Ⓡ 3 TO 6 GROUPS OF ORIGINATING REGISTERS.

JUNCTOR PATTERN TENS CONTROL

SFD-10-01-E505

ISSUE
5

BELL TELEPHONE LABORATORIES
INCORPORATED

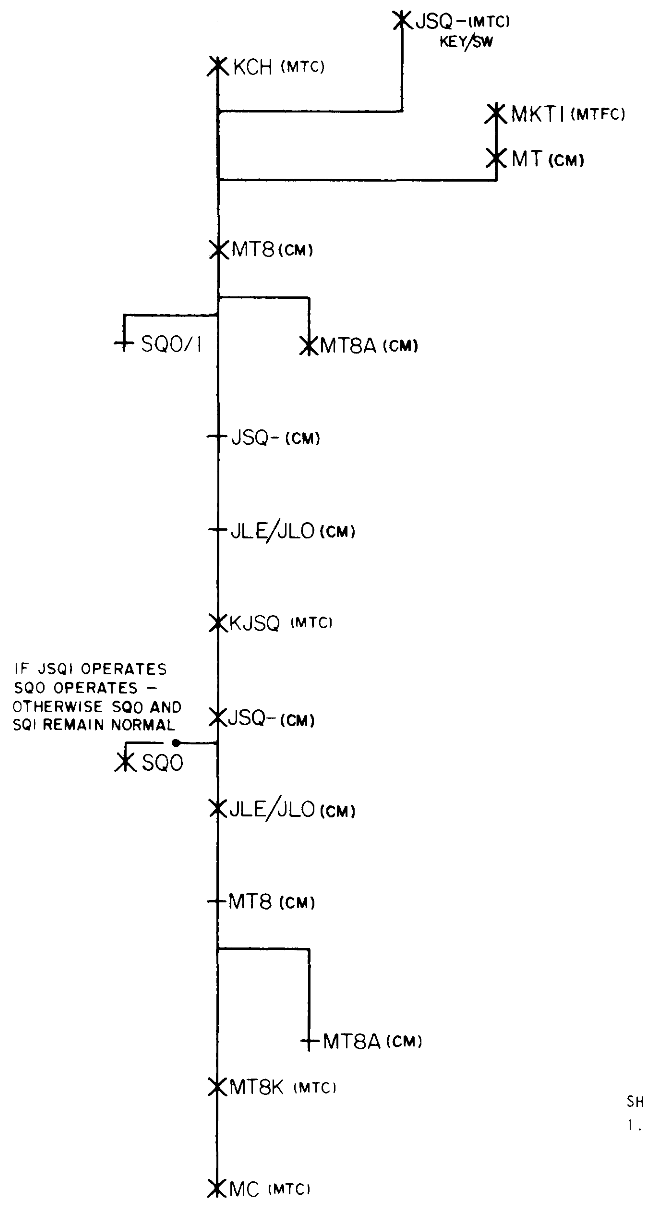
DWG SIZE
6S

PRINTED IN U.S.A.

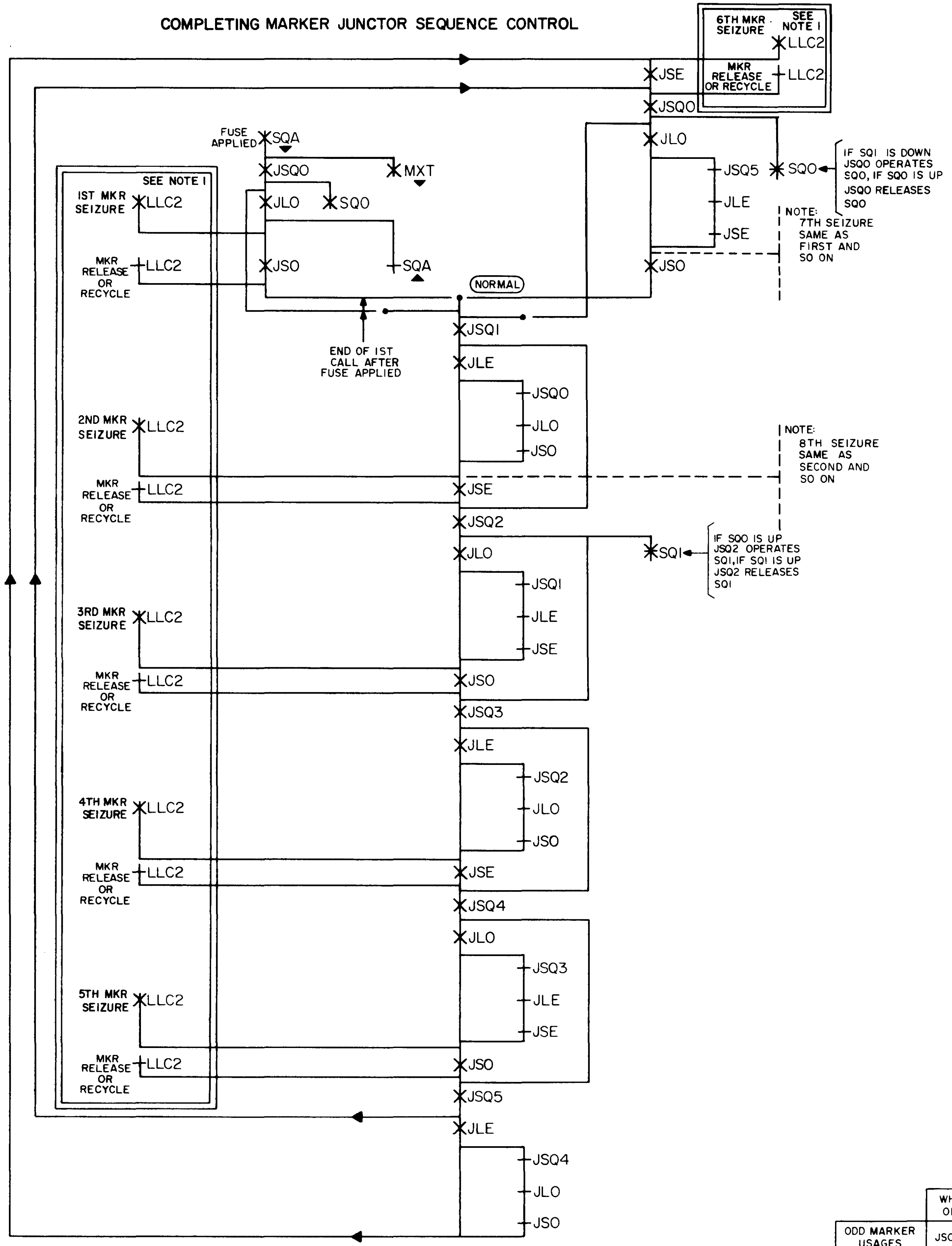
E-7421 (10-71)

SFD-10-01-E505

COMPLETING MARKER JUNCTOR SEQUENCE CONTROL (TEST CALL)



COMPLETING MARKER JUNCTOR SEQUENCE CONTROL



SHEET NOTES:

1. LLC2 IS OPERATED AT THE BEGINNING OF EACH MARKER SEIZURE (E102/X13) OR AFTER RECYCLE (E513/R40)

   LLC2 IS RELEASED UPON MARKER RELEASE (E803/M14) OR UPON START OF MARKER RECYCLE (E513/J31).

	WHEN LLC2 OPERATES	WHEN LLC2 RELEASES
ODD MARKER USAGES	JSO OPERATES	JSQ1,3 OR 5 & JLE OPERATES
EVEN MARKER USAGES	JSE OPERATES	JSQ0,2 OR 4 & JLO OPERATES

ISSUE
5

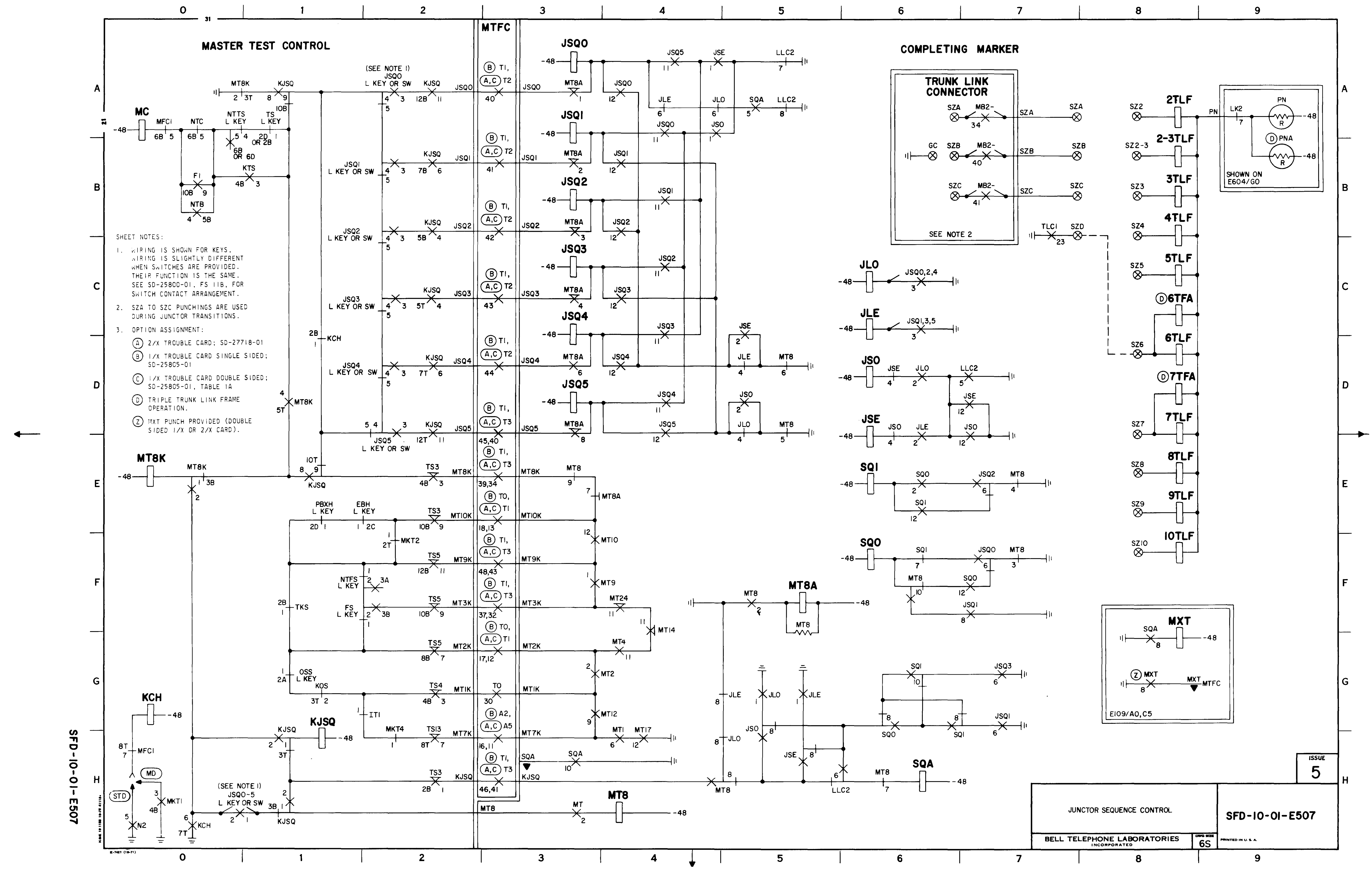
SFD-10-01-E506

SEQUENCE CHART
JUNCTOR SEQUENCE
CONTROL

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-E506



SHEET NOTES:

1. WIRING IS SHOWN FOR KEYS, WIRING IS SLIGHTLY DIFFERENT WHEN SWITCHES ARE PROVIDED. THEIR FUNCTION IS THE SAME. SEE SD-25800-01, FS 11B, FOR SWITCH CONTACT ARRANGEMENT.
2. SZA TO SZC PUNCHINGS ARE USED DURING JUNCTOR TRANSITIONS.
3. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓓ TRIPLE TRUNK LINK FRAME OPERATION.
   - Ⓩ MXT PUNCH PROVIDED (DOUBLE SIDED 1/X OR 2/X CARD).

ISSUE 5

JUNCTOR SEQUENCE CONTROL

SFD-10-01-E507

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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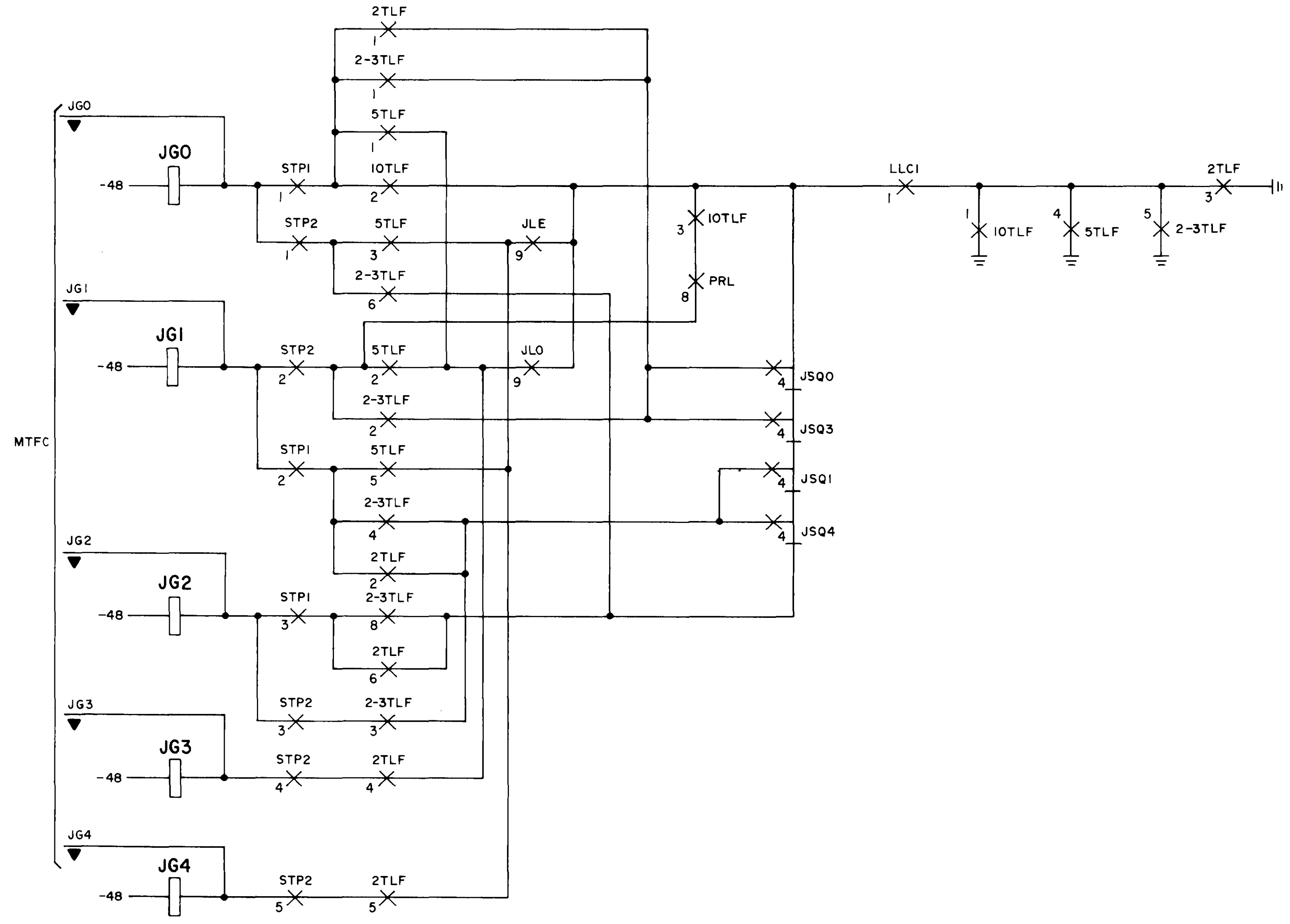
COMPLETING MARKER

JUNCTOR SUBGROUP SELECTION
FOR 2,2-3,5 AND 10 TLF SIZES
(SEE NOTE 1)



SHEET NOTES:

1. THIS IS A SIMPLIFIED DRAWING SHOWING PATHS USED FOR JUNCTOR SUBGROUP SELECTION IN 2,2-3,5 AND 10 TLF SIZES. ALL JUNCTOR SUBGROUPS FOR THESE SIZES HAVE 10 JUNCTORS.

ISSUE
5

SFD-10-01-E508

JUNCTOR SUBGROUP SELECTION
FOR 2,2-3,5 AND 10 TLF SIZES

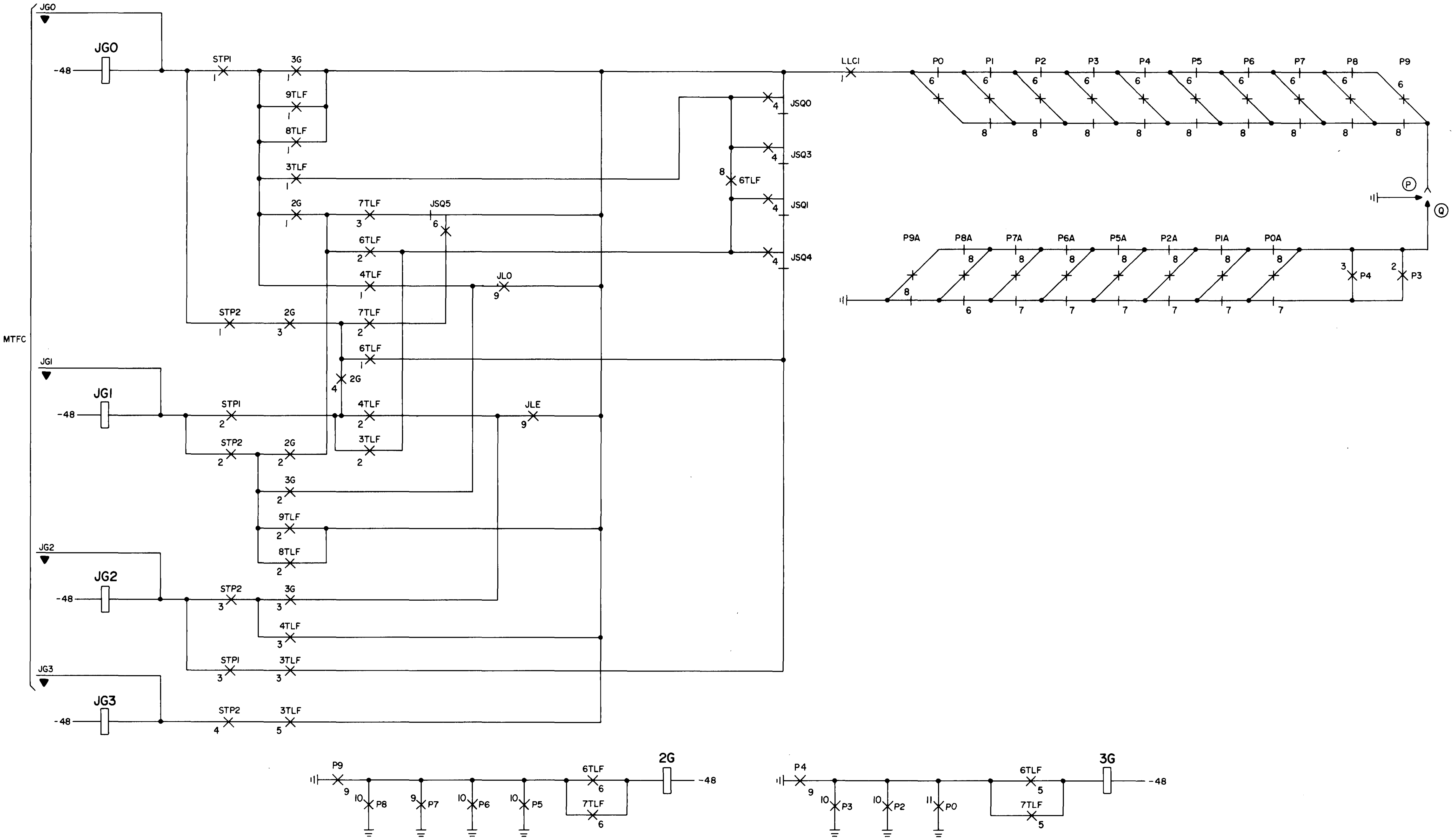
PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

COMPLETING MARKER

JUNCTOR SUBGROUP SELECTION
FOR 3,4,6,7,8,9 TLF SIZES
(SEE NOTE 1)



SHEET NOTES:

1. THIS IS A SIMPLIFIED DRAWING SHOWING PATHS USED FOR JUNCTOR SUBGROUP SELECTION IN 3,4,6,7,8, AND 9 TLF SIZES. EACH OF THESE SIZES HAVE ONE OR MORE JUNCTOR SUBGROUPS WITH LESS THAN 10 JUNCTORS.
2. OPTION ASSIGNMENTS:
   - Ⓟ 20 OR LESS TRUNK LINK FRAMES.
   - Ⓠ MORE THAN 20 TRUNK LINK FRAMES.

ISSUE
5

JUNCTOR SUBGROUP SELECTION
FOR 3,4,6,7,8,9 TLF SIZES

SFD-10-01-E509

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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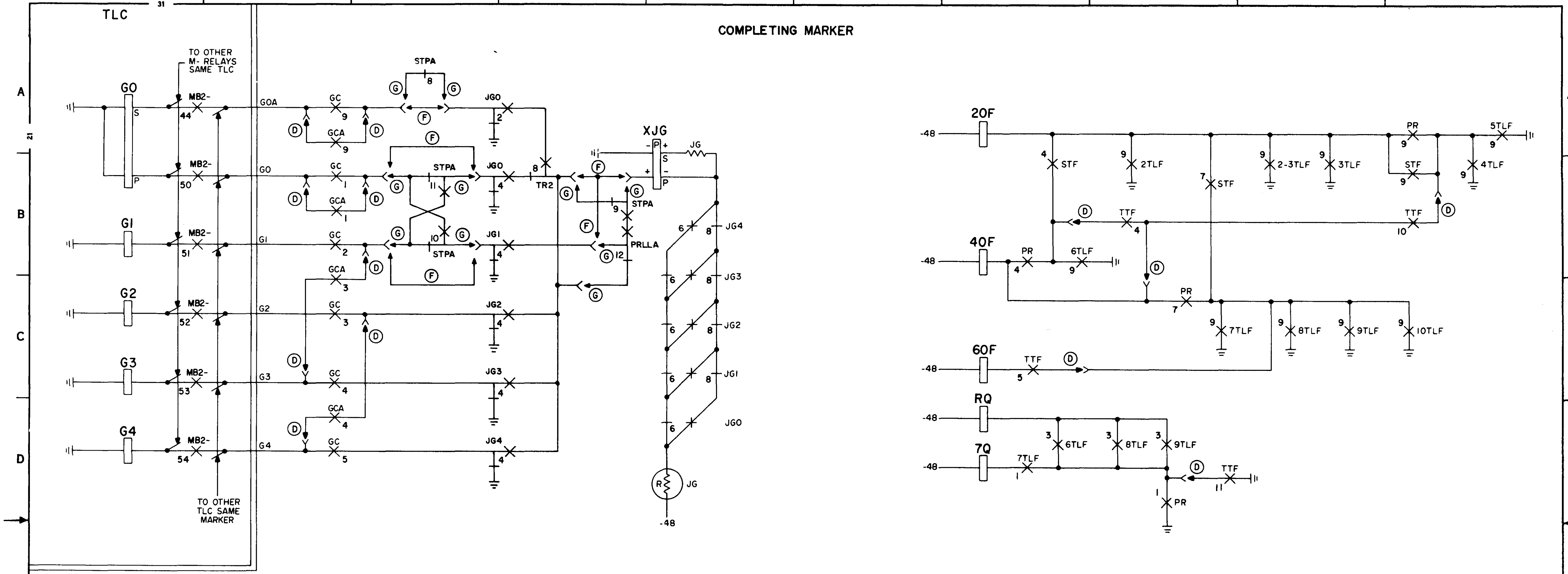
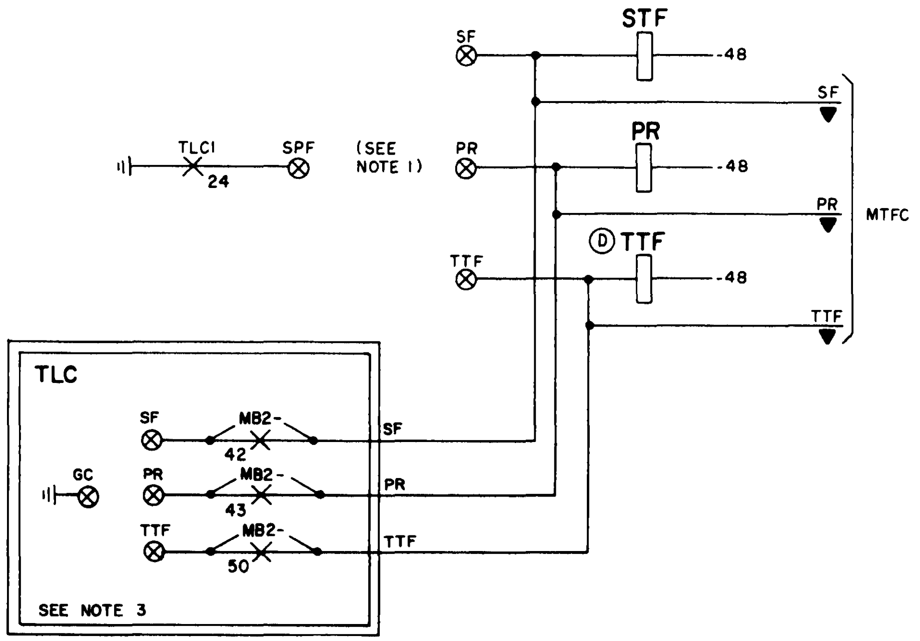
E-7421 (10-71)





SHEET NOTES:

1.

	XCONN	TO
SINGLE TL	SPF	SF
PAIRED TL	SPF	PR
TRIPLE TL	SPF	TTF

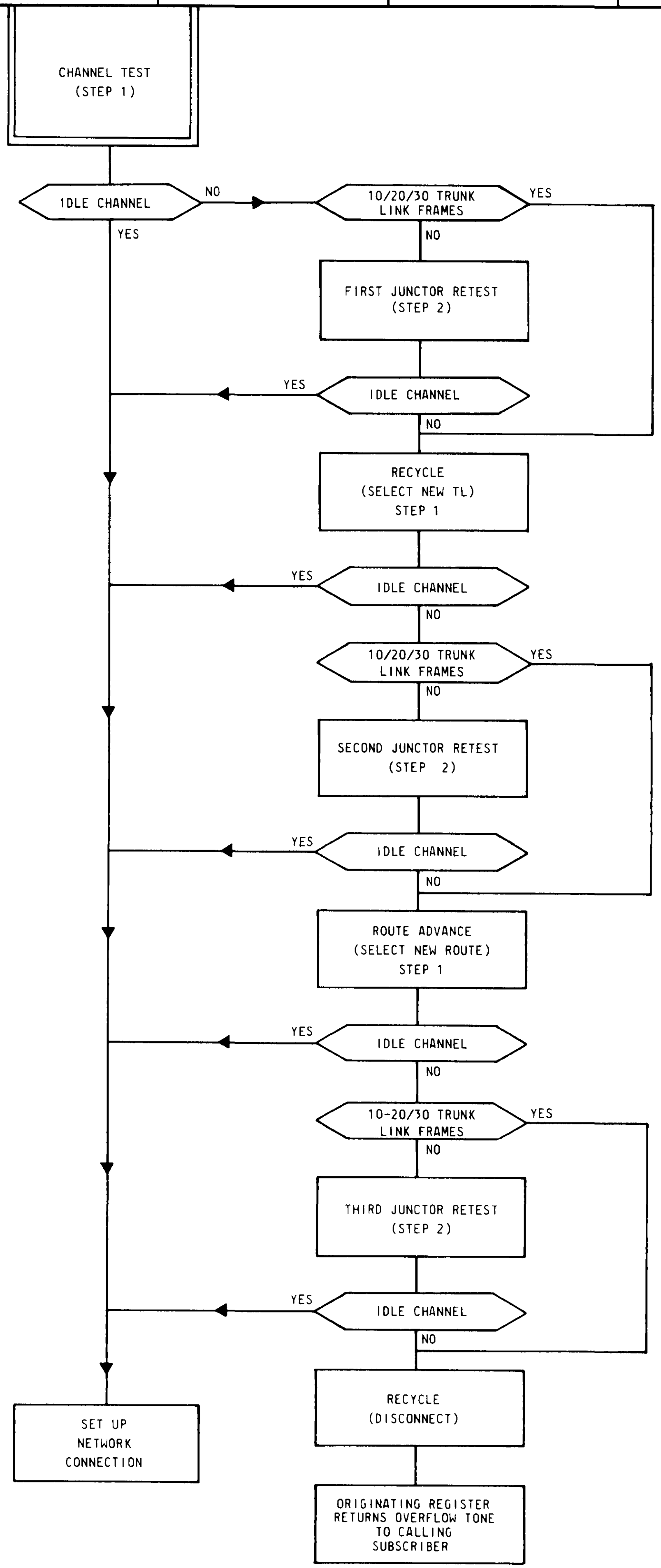
2. OPTION ASSIGNMENTS:
   - Ⓓ TRIPLE TRUNK LINK FRAMES
   - Ⓕ NON PAIRED LINE LINK FRAMES
   - Ⓖ PAIRED LINE LINK FRAMES
3. SF TO TTF PUNCHINGS ARE USED DURING JUNCTOR TRANSITIONS.

ISSUE
5

SFD-10-01-E510

JUNCTOR SUBGROUP
CONNECTOR RELAYS

PRINTED IN U.S.A.
6S
BELL TELEPHONE LABORATORIES
INCORPORATED



ISSUE
5

SFD-10-01-E512

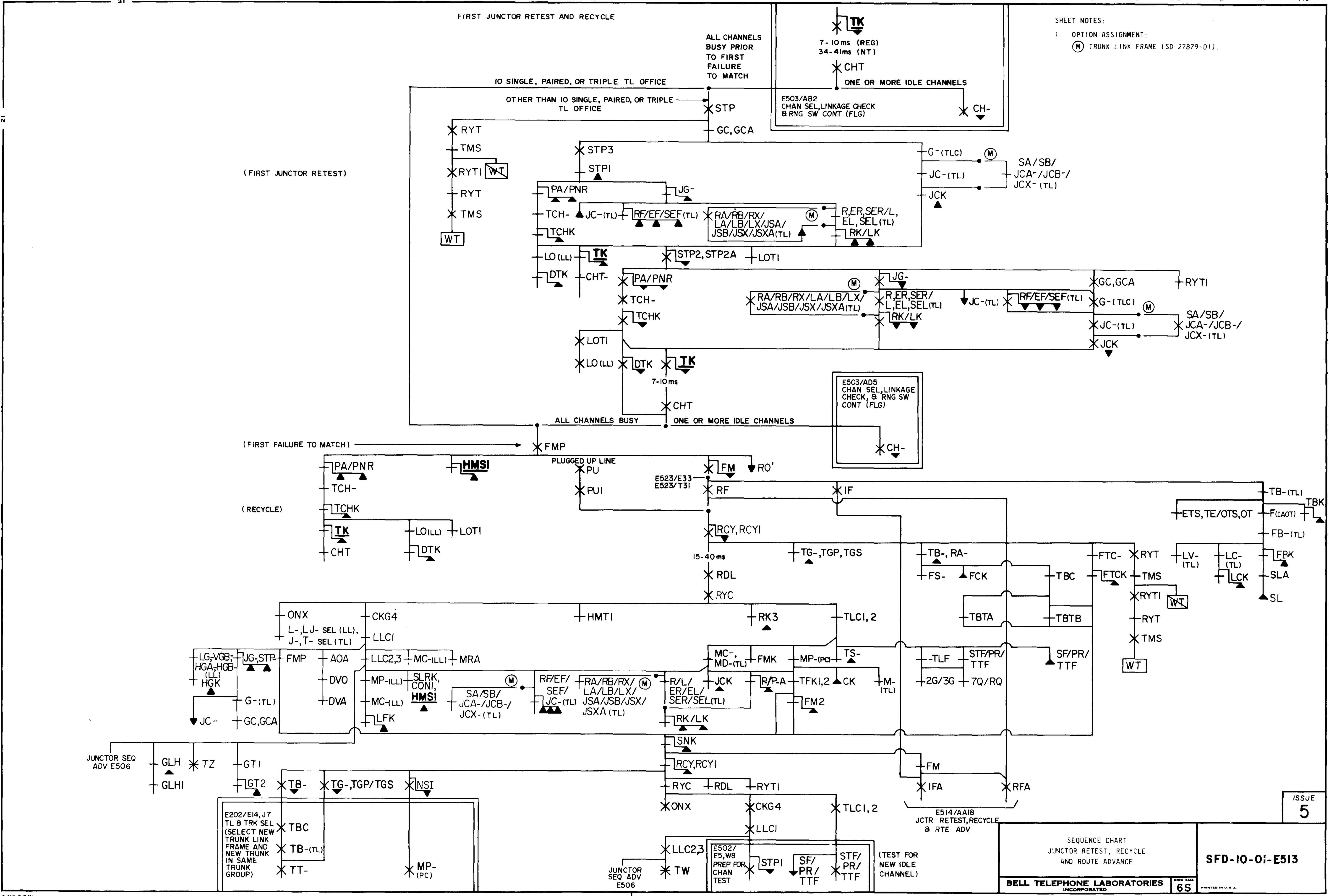
FLOW CHART
JUNCTOR RETEST, RECYCLE,
AND ROUTE ADVANCE

PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)



SHEET NOTES:

1 OPTION ASSIGNMENT:
Ⓜ TRUNK LINK FRAME (SD-27879-01).

ISSUE
5

SEQUENCE CHART
JUNCTOR RETEST, RECYCLE
AND ROUTE ADVANCE

SFD-10-01-E513

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

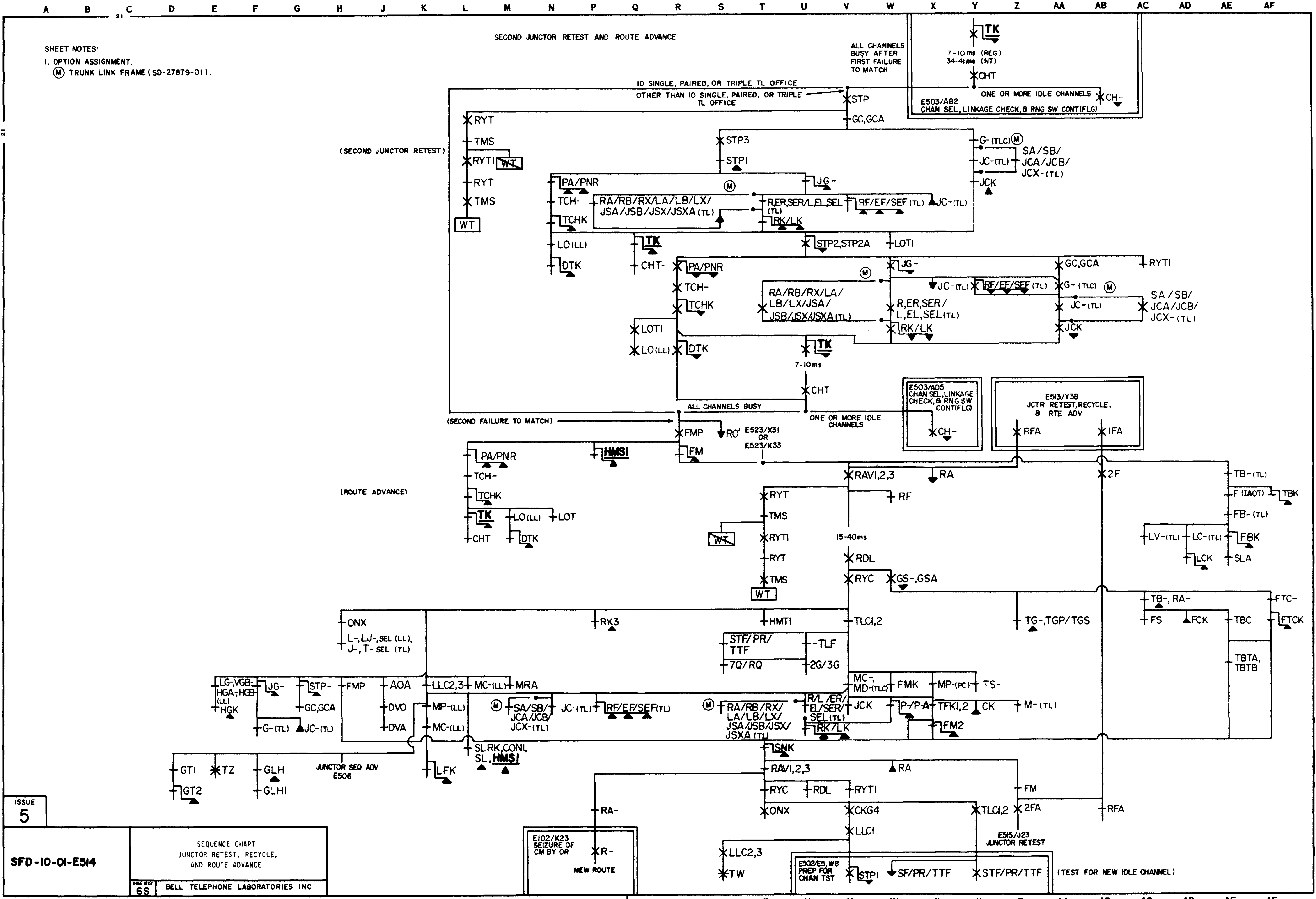
PRINTED IN U.S.A.

SFD-10-01-E513

SHEET NOTES:

1. OPTION ASSIGNMENT.
Ⓜ TRUNK LINK FRAME (SD-27879-01).

SECOND JUNCTOR RETEST AND ROUTE ADVANCE



ISSUE
5

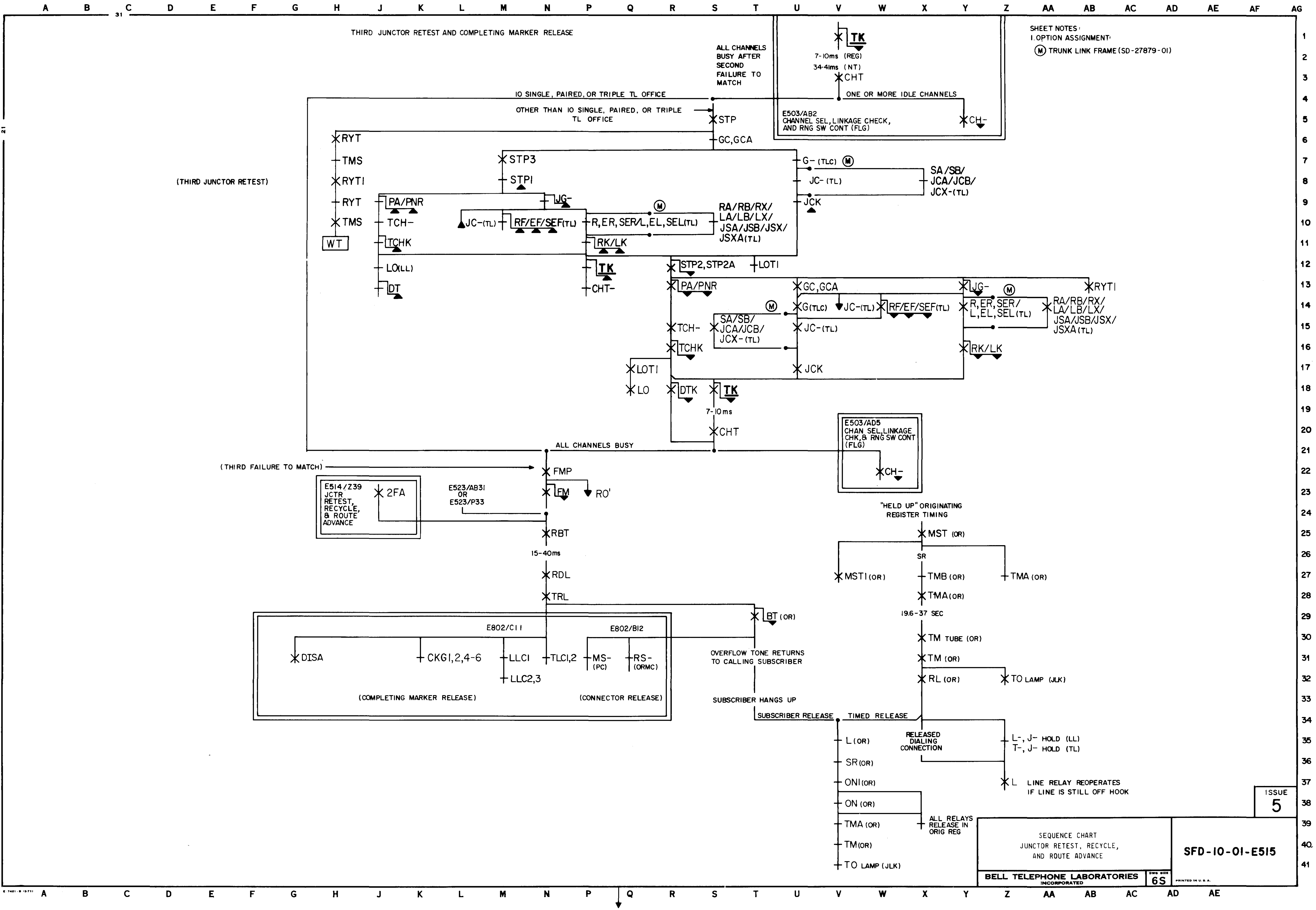
SFD-10-01-E514

SEQUENCE CHART
JUNCTOR RETEST, RECYCLE,
AND ROUTE ADVANCE

DWG SIZE
6S

BELL TELEPHONE LABORATORIES INC

SFD-10-01-E514



ISSUE
5

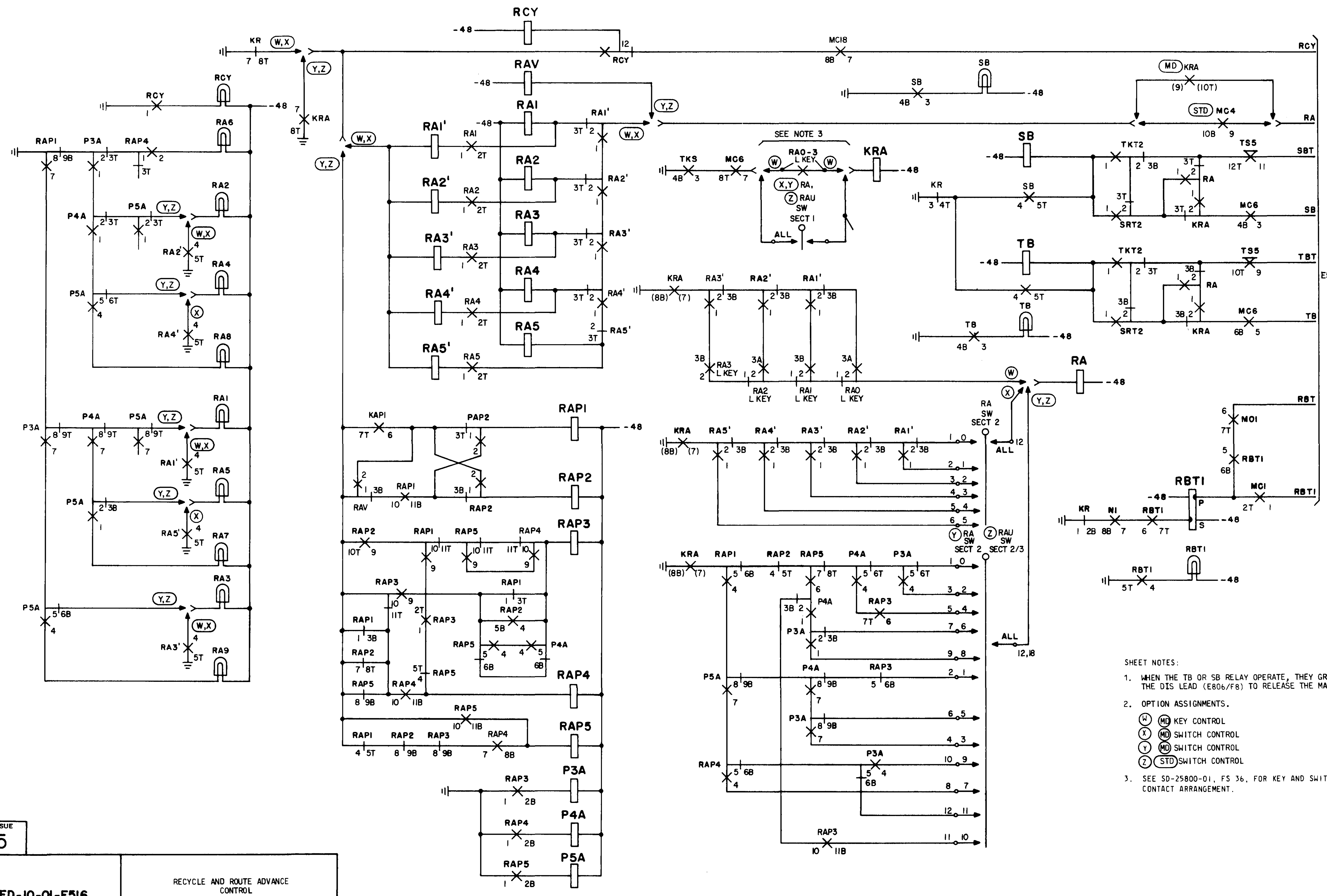
SEQUENCE CHART
JUNCTOR RETEST, RECYCLE,
AND ROUTE ADVANCE

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SFD-10-01-E515

MASTER TEST CONTROL



SHEET NOTES:

1. WHEN THE TB OR SB RELAY OPERATE, THEY GROUND THE DIS LEAD (E806/F8) TO RELEASE THE MARKER.

2. OPTION ASSIGNMENTS.

   Ⓦ Ⓜ︎Ⓓ KEY CONTROL
   Ⓧ (MD) SWITCH CONTROL
   Ⓨ (MD) SWITCH CONTROL
   Ⓩ (STD) SWITCH CONTROL

3. SEE SD-25800-01, FS 36, FOR KEY AND SWITCH CONTACT ARRANGEMENT.

ISSUE
5

SFD-10-01-E516

RECYCLE AND ROUTE ADVANCE
CONTROL

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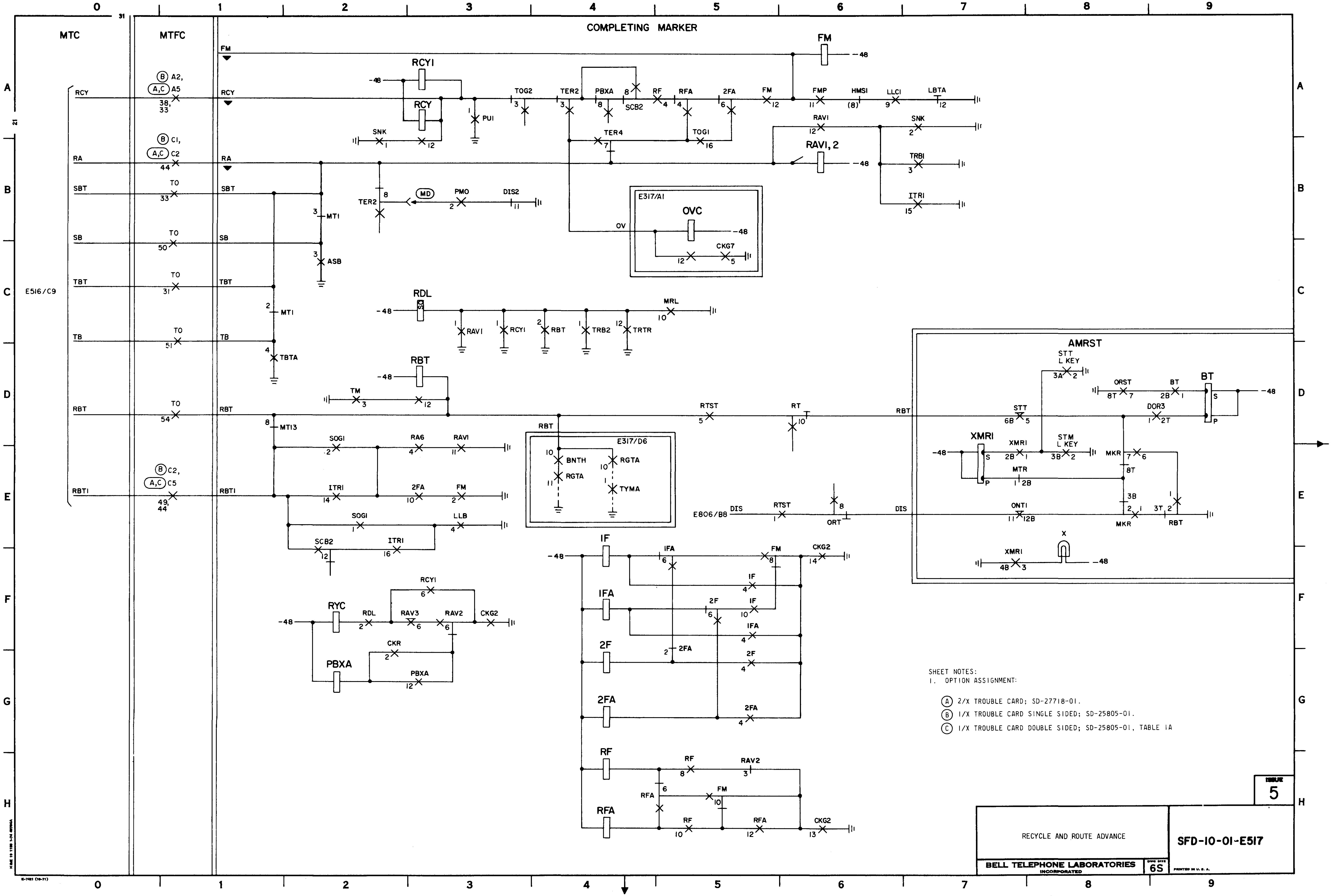
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-E516



SHEET NOTES:
1. OPTION ASSIGNMENT:

Ⓐ 2/X TROUBLE CARD; SD-27718-01.
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01.
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

ISSUE 5

RECYCLE AND ROUTE ADVANCE

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SFD-10-01-E517

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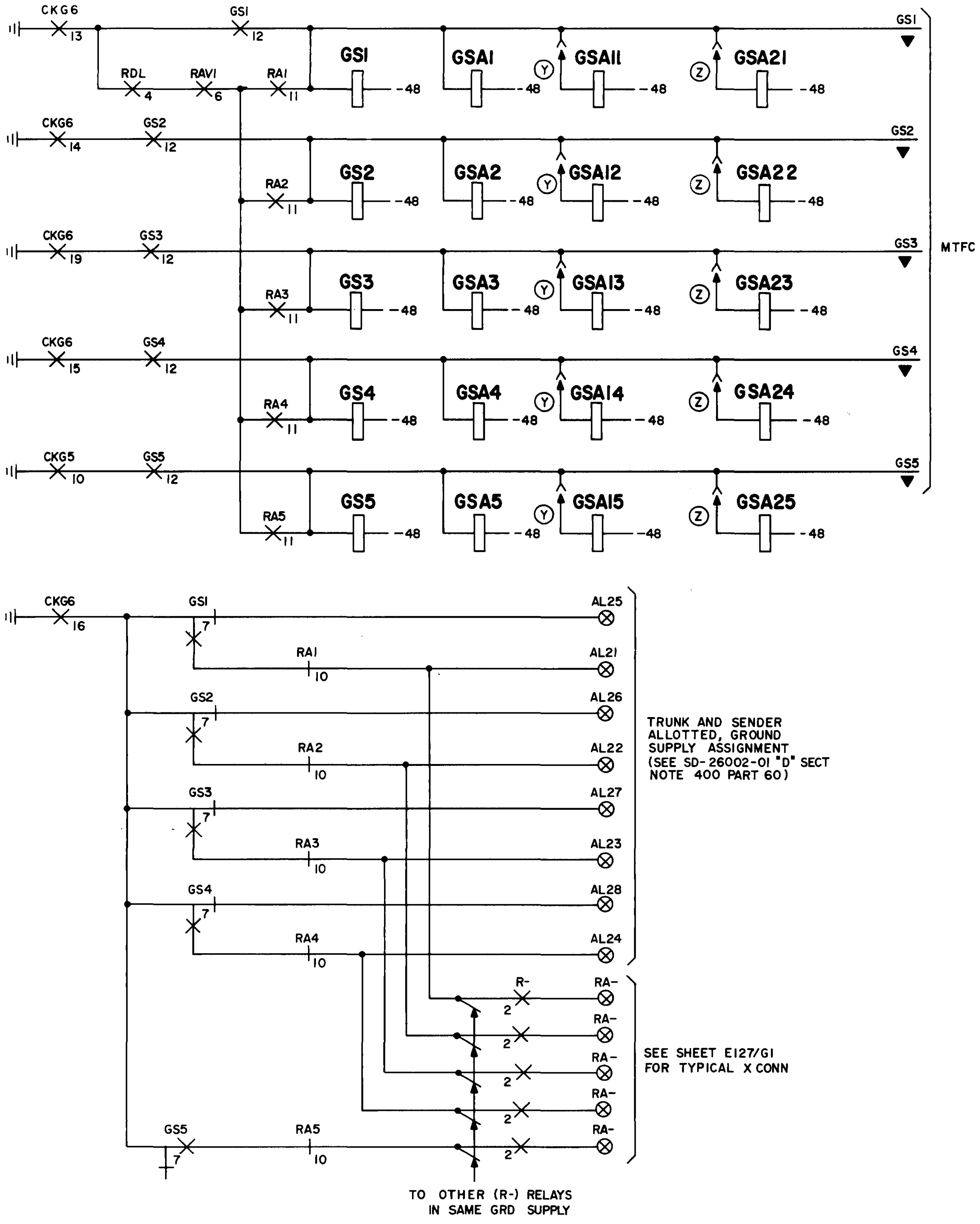
SFD-10-01-E517

COMPLETING MARKER



TRUNK AND SENDER ALLOTTED, GROUND SUPPLY ASSIGNMENT (SEE SD-26002-01 "D" SECT NOTE 400 PART 60)

SEE SHEET E127/G1 FOR TYPICAL X CONN

TO OTHER (R-) RELAYS IN SAME GRD SUPPLY

SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓨ 10 OR MORE TRUNK LINK FRAMES.

Ⓩ 20 OR MORE TRUNK LINK FRAMES.

ISSUE 5

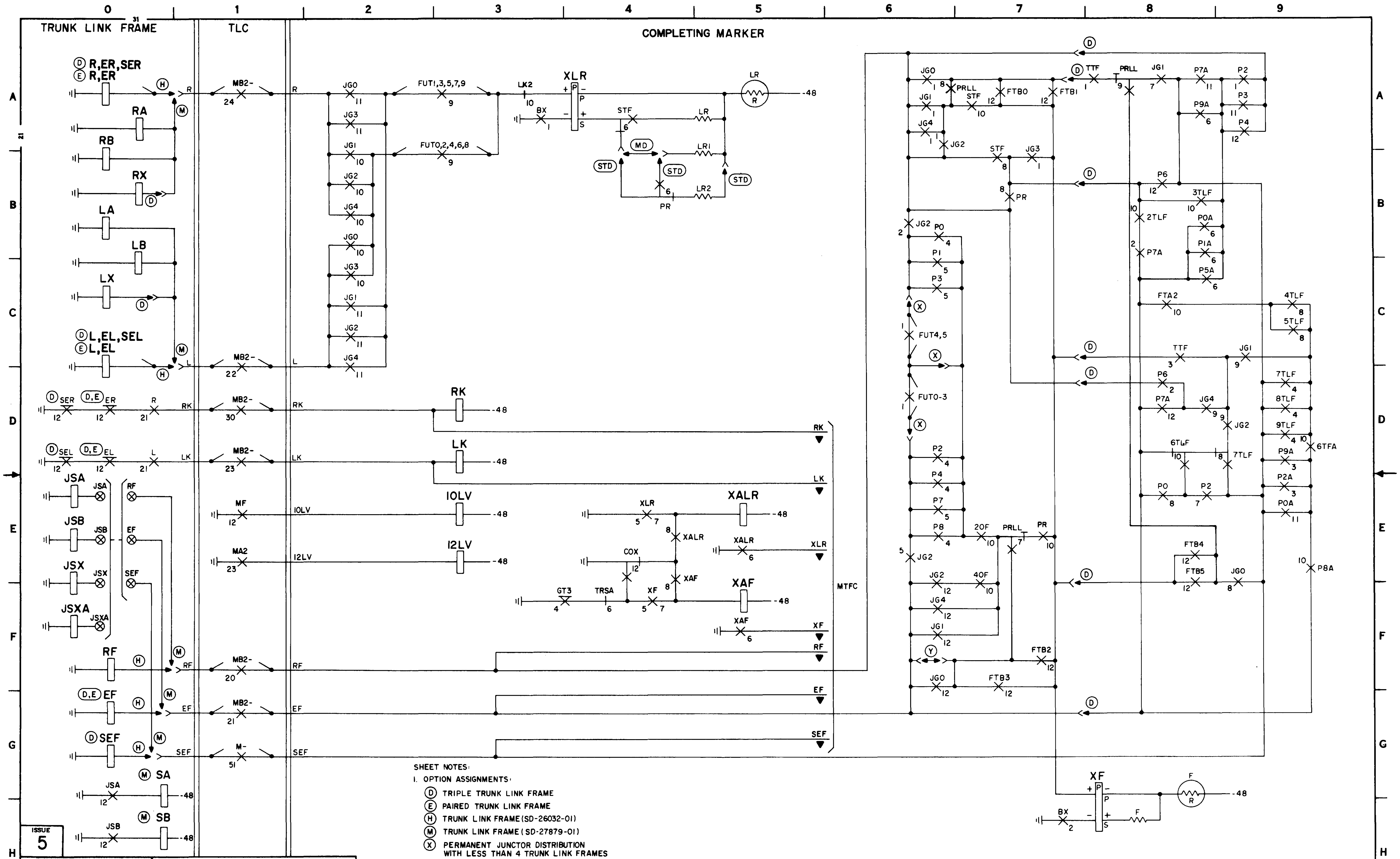
GROUND SUPPLY AND ROUTE ADVANCE

SFD-10-01-E519

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓓ TRIPLE TRUNK LINK FRAME
   - Ⓔ PAIRED TRUNK LINK FRAME
   - Ⓗ TRUNK LINK FRAME (SD-26032-01)
   - Ⓜ TRUNK LINK FRAME (SD-27879-01)
   - Ⓧ PERMANENT JUNCTOR DISTRIBUTION WITH LESS THAN 4 TRUNK LINK FRAMES
   - Ⓨ 5 TRIPLE TRUNK LINK FRAMES ONLY

ISSUE 5

SFD-10-01-E520

RIGHT OR LEFT, REGULAR, EXTENSION,
OR SECOND EXTENSION
TRUNK LINK FRAME

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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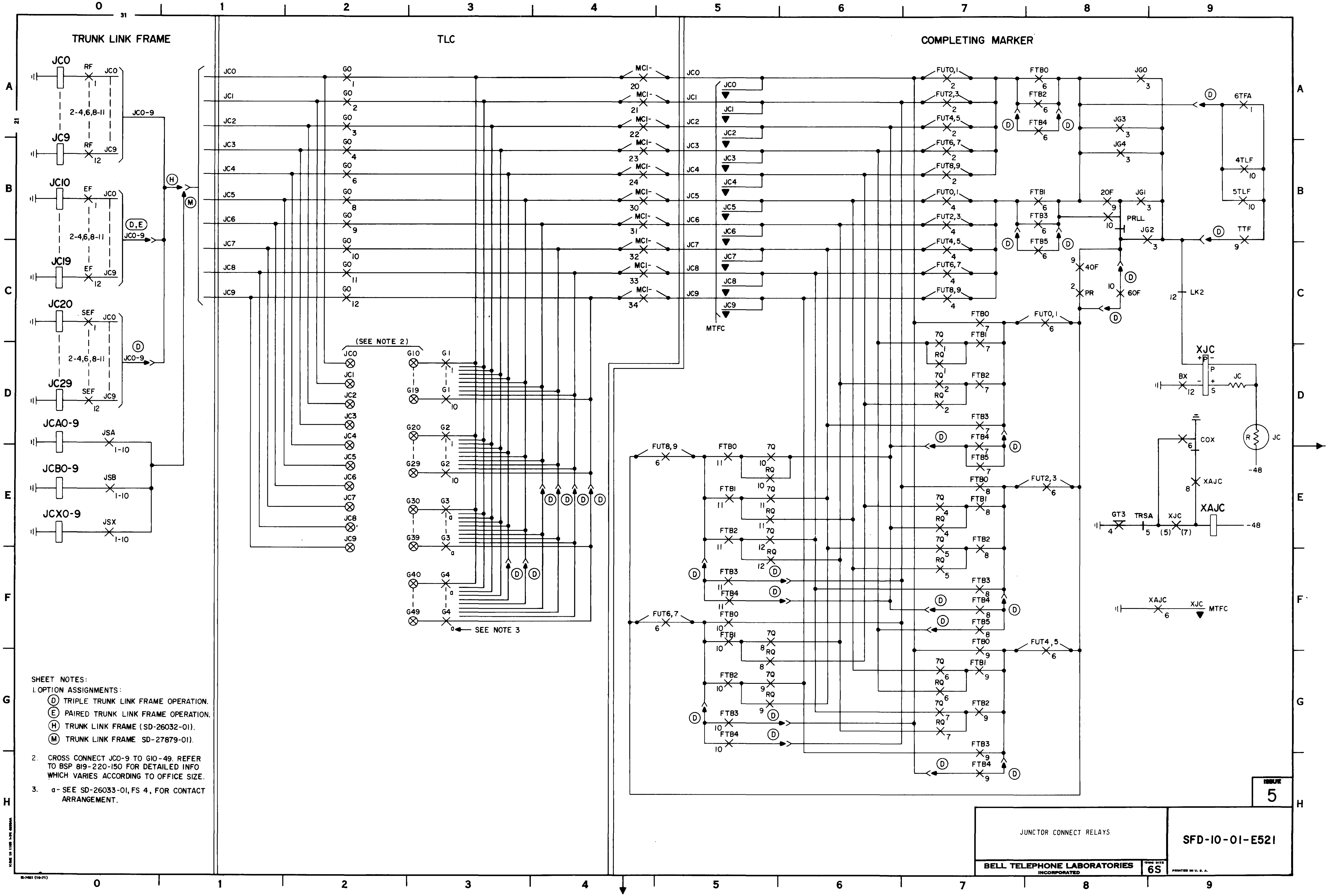
SFD-10-01-E520



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓓ TRIPLE TRUNK LINK FRAME OPERATION.
   - Ⓔ PAIRED TRUNK LINK FRAME OPERATION.
   - Ⓗ TRUNK LINK FRAME (SD-26032-01).
   - Ⓜ TRUNK LINK FRAME SD-27879-01).
2. CROSS CONNECT JC0-9 TO G10-49. REFER TO BSP 819-220-150 FOR DETAILED INFO WHICH VARIES ACCORDING TO OFFICE SIZE.
3. a- SEE SD-26033-01, FS 4, FOR CONTACT ARRANGEMENT.

ISSUE 5

JUNCTOR CONNECT RELAYS

SFD-10-01-E521

BELL TELEPHONE LABORATORIES INCORPORATED

6S

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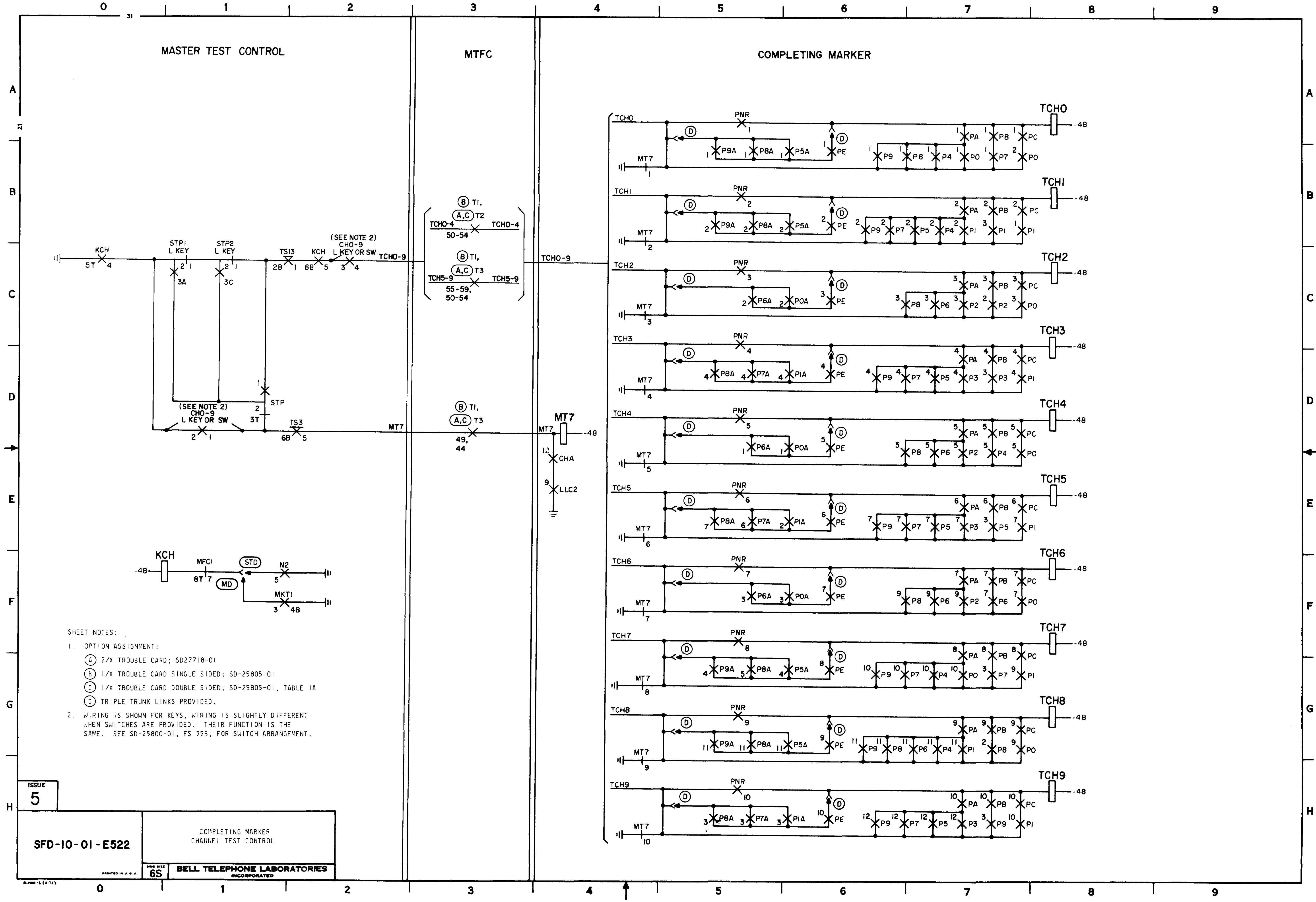

SHEET NOTES:

1. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓓ TRIPLE TRUNK LINKS PROVIDED.
2. WIRING IS SHOWN FOR KEYS. WIRING IS SLIGHTLY DIFFERENT WHEN SWITCHES ARE PROVIDED. THEIR FUNCTION IS THE SAME. SEE SD-25800-01, FS 35B, FOR SWITCH ARRANGEMENT.

ISSUE
5

SFD-10-01-E522

COMPLETING MARKER
CHANNEL TEST CONTROL

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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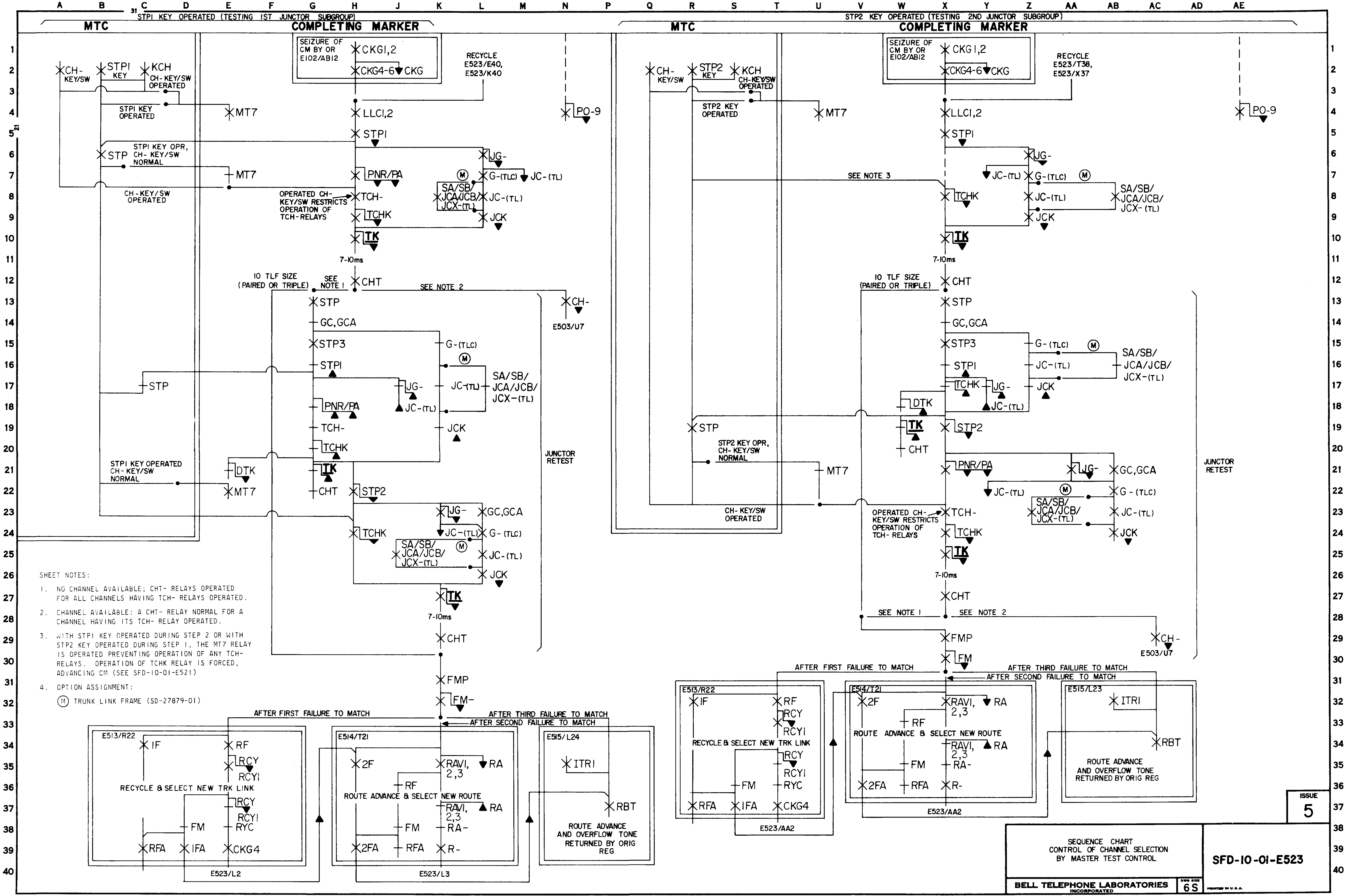
B-7481-L (4-73)

SFD-10-01-E522



STP1 KEY OPERATED (TESTING 1ST JUNCTOR SUBGROUP)
MTC
COMPLETING MARKER
SEIZURE OF CM BY OR E102/AB12
CKG1,2
CKG4-6
CKG
RECYCLE E523/E40, E523/K40
CH- KEY/SW
STP1 KEY
KCH
CH-KEY/SW OPERATED
STP1 KEY OPERATED
MT7
LLC1,2
STP1
PO-9
STP1 KEY OPR, CH- KEY/SW NORMAL
STP
JG-
PNR/PA
G-(TLC)
JC-(TL)
CH-KEY/SW OPERATED
OPERATED CH-KEY/SW RESTRICTS OPERATION OF TCH-RELAYS
TCH-
SA/SB/ JCA/JCB/ JCX-(TL)
TCHK
JCK
TK
7-10ms
10 TLF SIZE (PAIRED OR TRIPLE)
SEE NOTE 1
CHT
SEE NOTE 2
CH-
E503/U7
GC,GCA
STP3
DTK
STP2
JUNCTOR RETEST
STP1 KEY OPERATED CH- KEY/SW NORMAL
FMP
FM-
AFTER FIRST FAILURE TO MATCH
AFTER THIRD FAILURE TO MATCH
AFTER SECOND FAILURE TO MATCH
E513/R22
IF
RF
RCY
RCY1
RECYCLE & SELECT NEW TRK LINK
FM
RYC
RFA
IFA
CKG4
E523/L2
E514/T21
2F
RAV1, 2,3
RA
ROUTE ADVANCE & SELECT NEW ROUTE
RA-
2FA
R-
E523/L3
E515/L24
ITR1
RBT
ROUTE ADVANCE AND OVERFLOW TONE RETURNED BY ORIG REG
STP2 KEY OPERATED (TESTING 2ND JUNCTOR SUBGROUP)
RECYCLE E523/T38, E523/X37
STP2 KEY
STP2 KEY OPERATED
SEE NOTE 3
STP2 KEY OPR, CH- KEY/SW NORMAL
FM
E523/AA2
ROUTE ADVANCE AND OVERFLOW TONE RETURNED BY ORIG REG

SHEET NOTES:

1. NO CHANNEL AVAILABLE; CHT- RELAYS OPERATED FOR ALL CHANNELS HAVING TCH- RELAYS OPERATED.
2. CHANNEL AVAILABLE: A CHT- RELAY NORMAL FOR A CHANNEL HAVING ITS TCH- RELAY OPERATED.
3. WITH STP1 KEY OPERATED DURING STEP 2 OR WITH STP2 KEY OPERATED DURING STEP 1, THE MT7 RELAY IS OPERATED PREVENTING OPERATION OF ANY TCH- RELAYS. OPERATION OF TCHK RELAY IS FORCED, ADVANCING CM (SEE SFD-10-01-E521)
4. OPTION ASSIGNMENT:

Ⓜ TRUNK LINK FRAME (SD-27879-01)

ISSUE 5

SEQUENCE CHART
CONTROL OF CHANNEL SELECTION
BY MASTER TEST CONTROL

SFD-10-01-E523

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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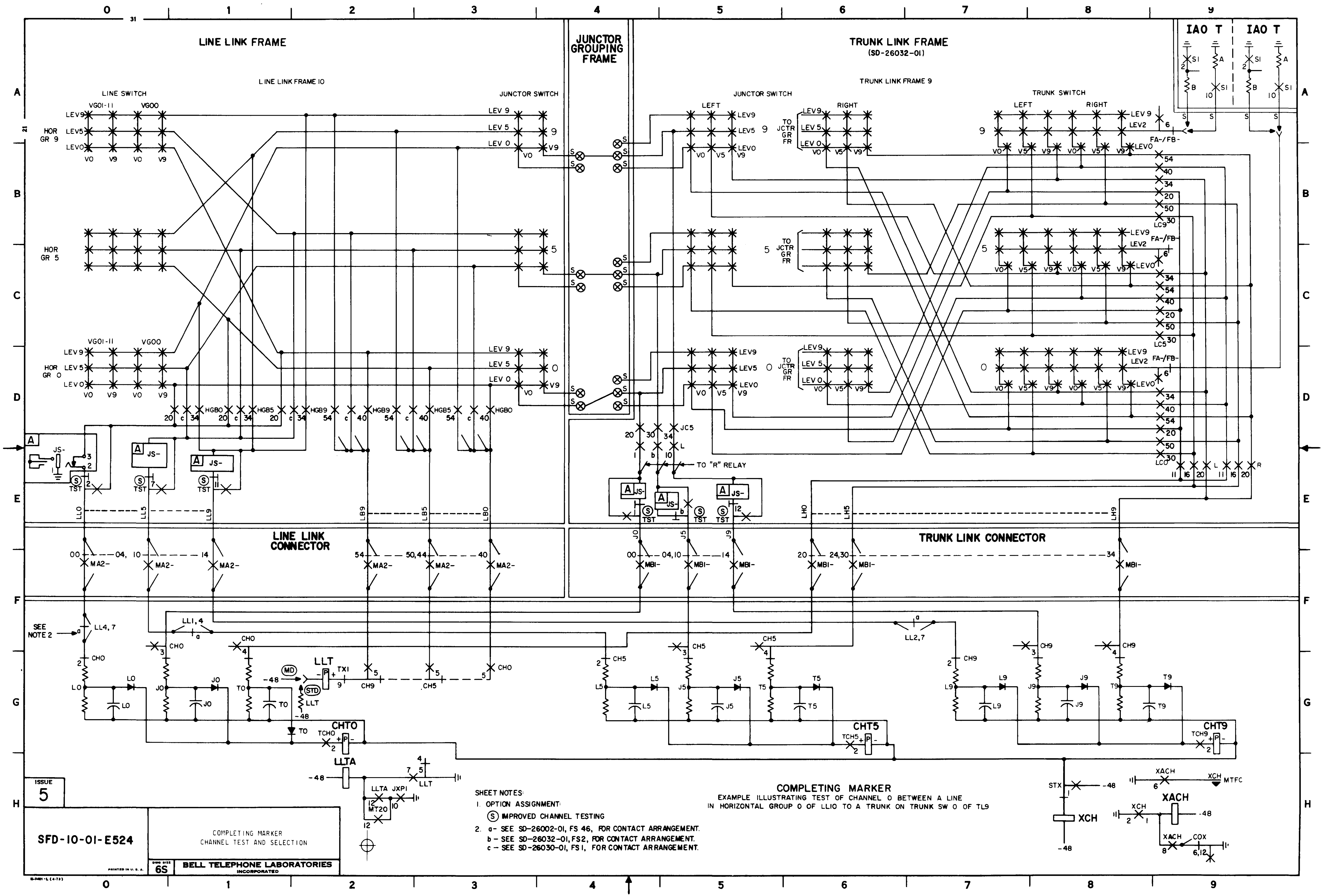
SFD-10-01-E523

BRUNING 44.131 24092

E-7421-B (10-71)



COMPLETING MARKER
EXAMPLE ILLUSTRATING TEST OF CHANNEL 0 BETWEEN A LINE
IN HORIZONTAL GROUP 0 OF LL10 TO A TRUNK ON TRUNK SW 0 OF TL9

SHEET NOTES:

1. OPTION ASSIGNMENT:
   Ⓢ IMPROVED CHANNEL TESTING
2. a- SEE SD-26002-01, FS 46, FOR CONTACT ARRANGEMENT.
   b - SEE SD-26032-01, FS2, FOR CONTACT ARRANGEMENT.
   c - SEE SD-26030-01, FS1, FOR CONTACT ARRANGEMENT.

ISSUE
5

SFD-10-01-E524

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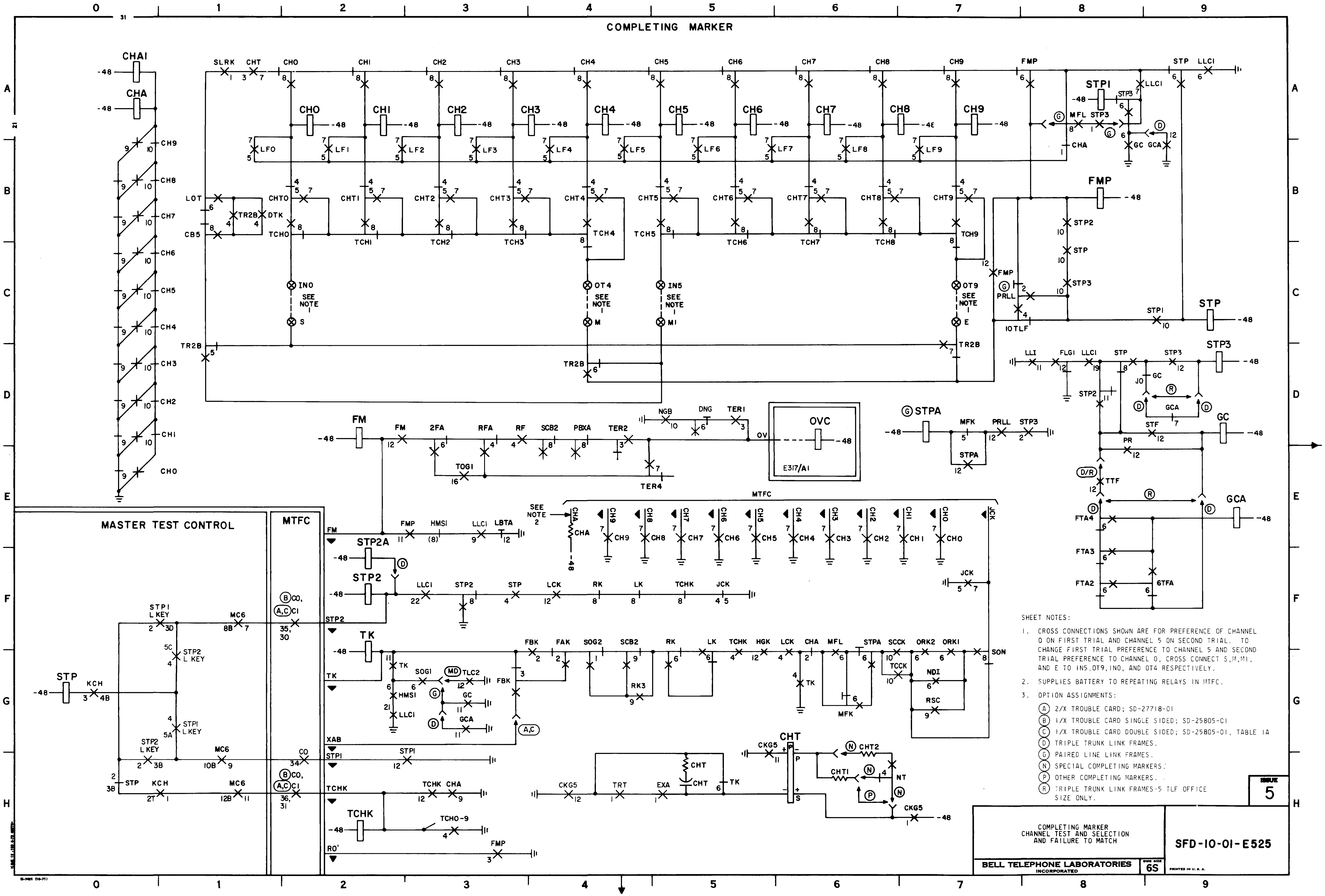
COMPLETING MARKER
CHANNEL TEST AND SELECTION

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-E524
2 SHEETS, SH 1



SHEET NOTES:

1. CROSS CONNECTIONS SHOWN ARE FOR PREFERENCE OF CHANNEL 0 ON FIRST TRIAL AND CHANNEL 5 ON SECOND TRIAL. TO CHANGE FIRST TRIAL PREFERENCE TO CHANNEL 5 AND SECOND TRIAL PREFERENCE TO CHANNEL 0, CROSS CONNECT S,M,M1, AND E TO IN5,OT9,IN0, AND OT4 RESPECTIVELY.
2. SUPPLIES BATTERY TO REPEATING RELAYS IN MTFC.
3. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-C1
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓓ TRIPLE TRUNK LINK FRAMES.
   - Ⓖ PAIRED LINE LINK FRAMES.
   - Ⓝ SPECIAL COMPLETING MARKERS.
   - Ⓟ OTHER COMPLETING MARKERS.
   - Ⓡ TRIPLE TRUNK LINK FRAMES-5 TLF OFFICE SIZE ONLY.

ISSUE 5

COMPLETING MARKER
CHANNEL TEST AND SELECTION
AND FAILURE TO MATCH

SFD-10-01-E525

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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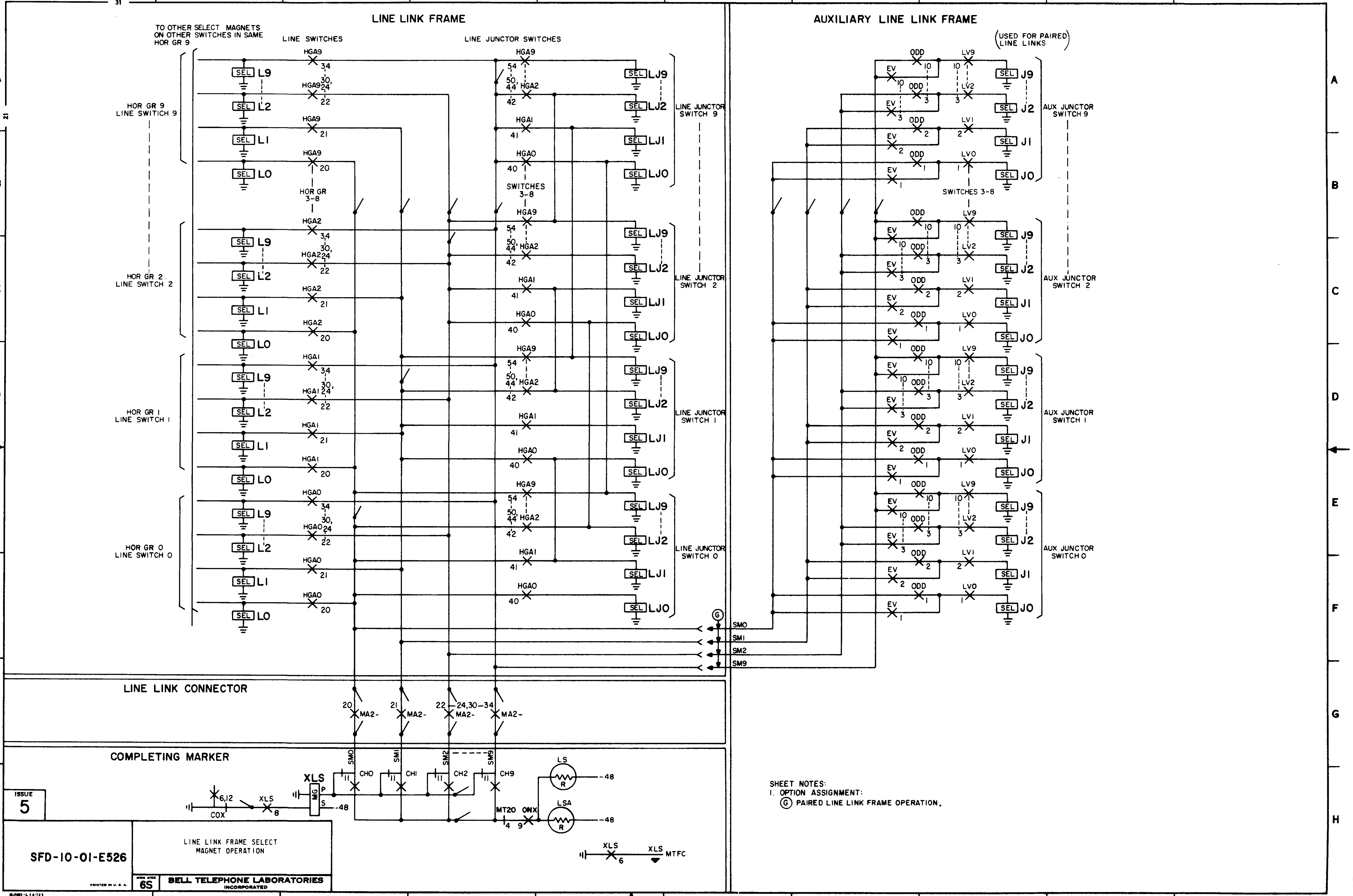
SFD-10-01-E525



SHEET NOTES:
1. OPTION ASSIGNMENT:
Ⓖ PAIRED LINE LINK FRAME OPERATION.

ISSUE
5

SFD-10-01-E526

LINE LINK FRAME SELECT
MAGNET OPERATION

SIZE 6S

BELL TELEPHONE LABORATORIES
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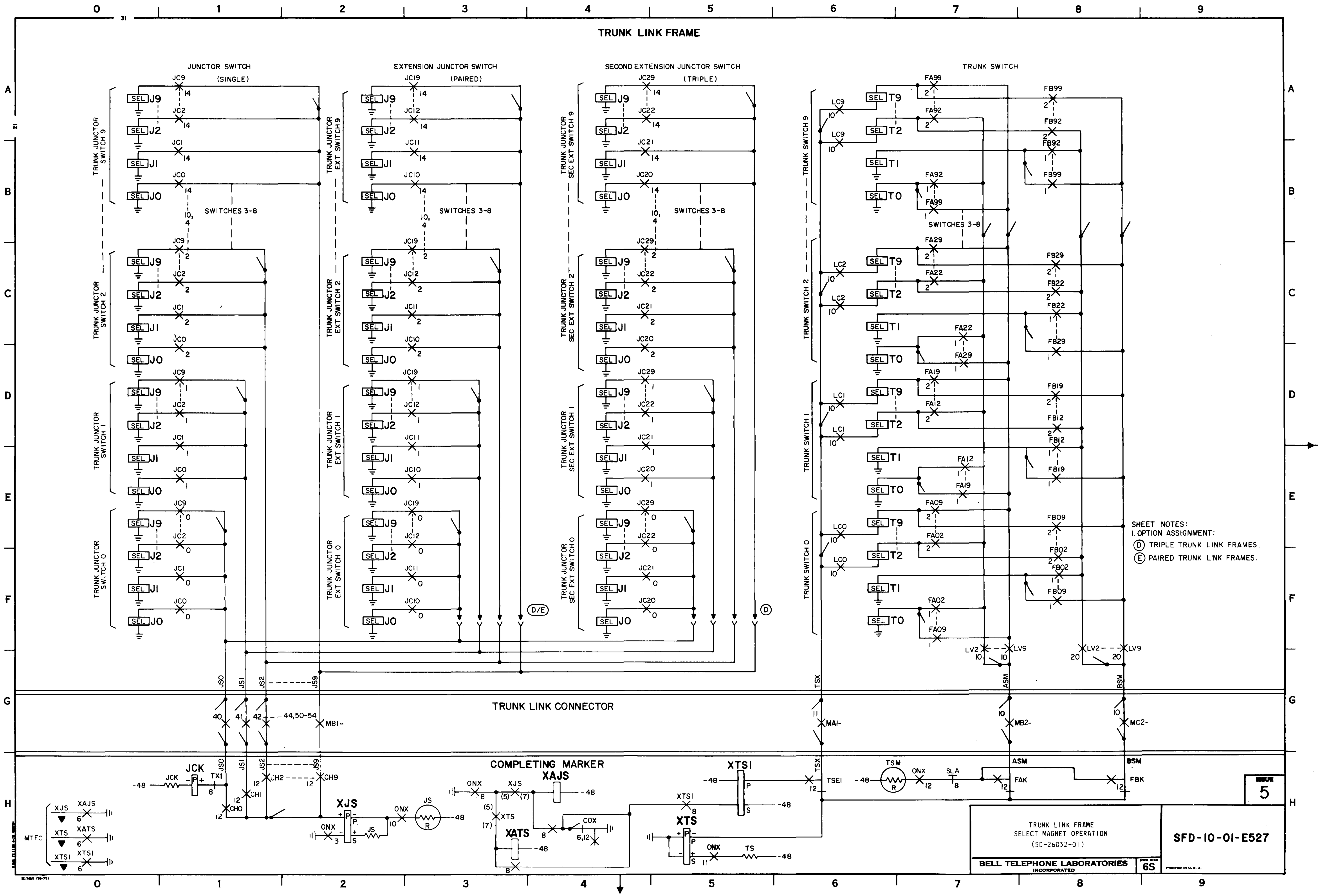
SFD-10-01-E526



SHEET NOTES:

1. OPTION ASSIGNMENT:

Ⓓ TRIPLE TRUNK LINK FRAMES.

Ⓔ PAIRED TRUNK LINK FRAMES.

ISSUE 5

TRUNK LINK FRAME
SELECT MAGNET OPERATION
(SD-26032-01)

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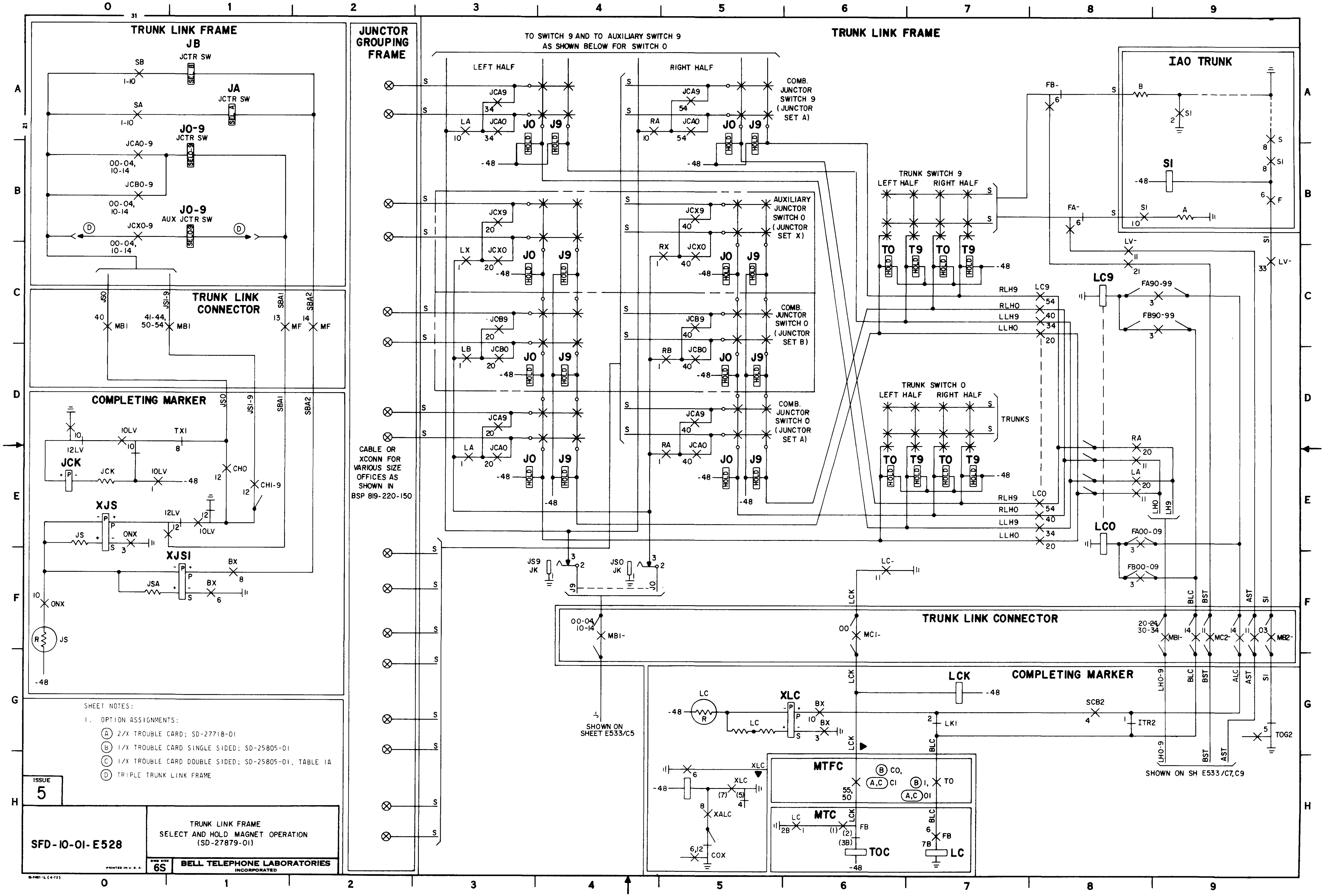
SFD-10-01-E527



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓓ TRIPLE TRUNK LINK FRAME

ISSUE
5

SFD-10-01-E528

TRUNK LINK FRAME
SELECT AND HOLD MAGNET OPERATION
(SD-27879-01)

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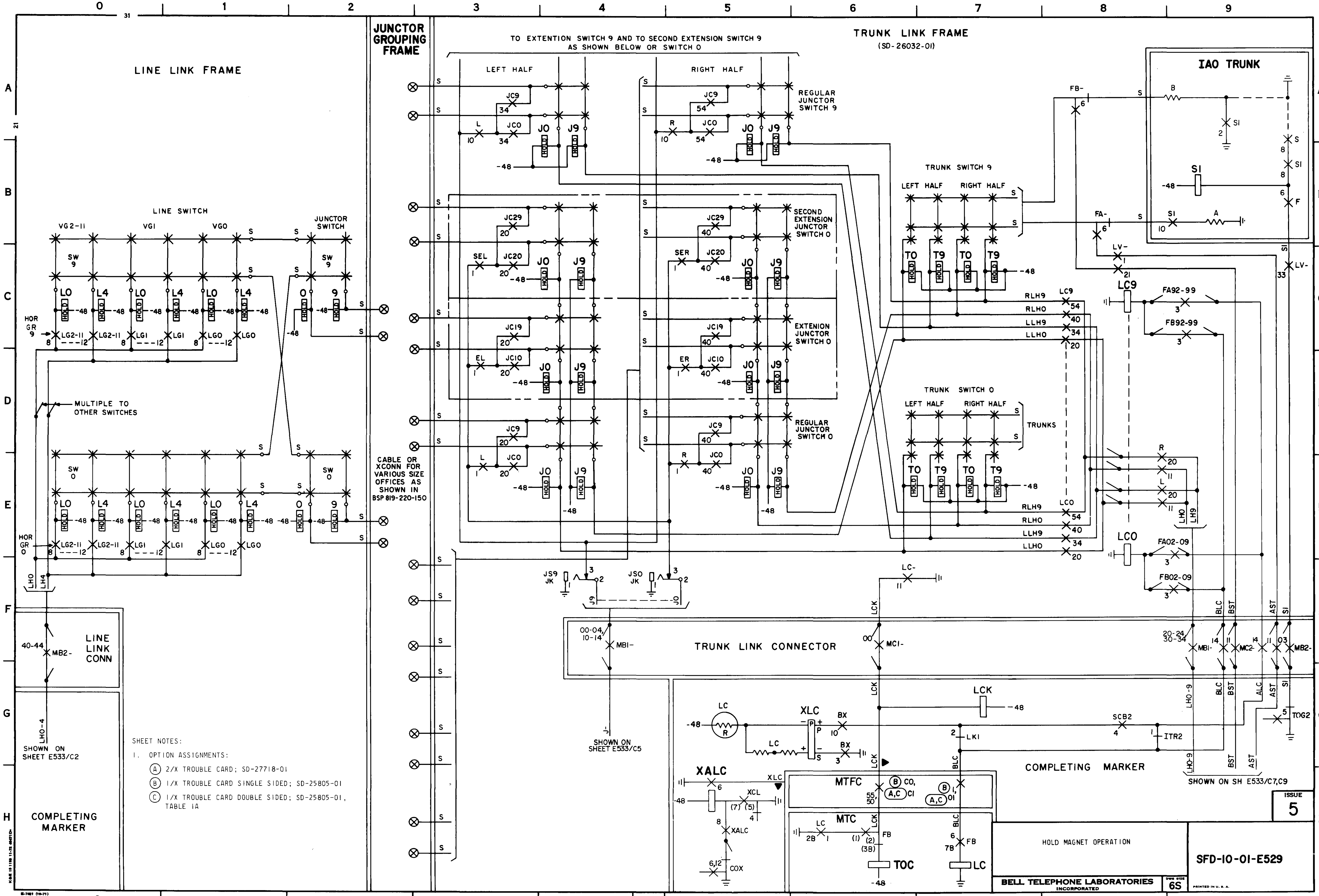
DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-E528



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

HOLD MAGNET OPERATION

SFD-10-01-E529

ISSUE 5

BELL TELEPHONE LABORATORIES INCORPORATED

6S

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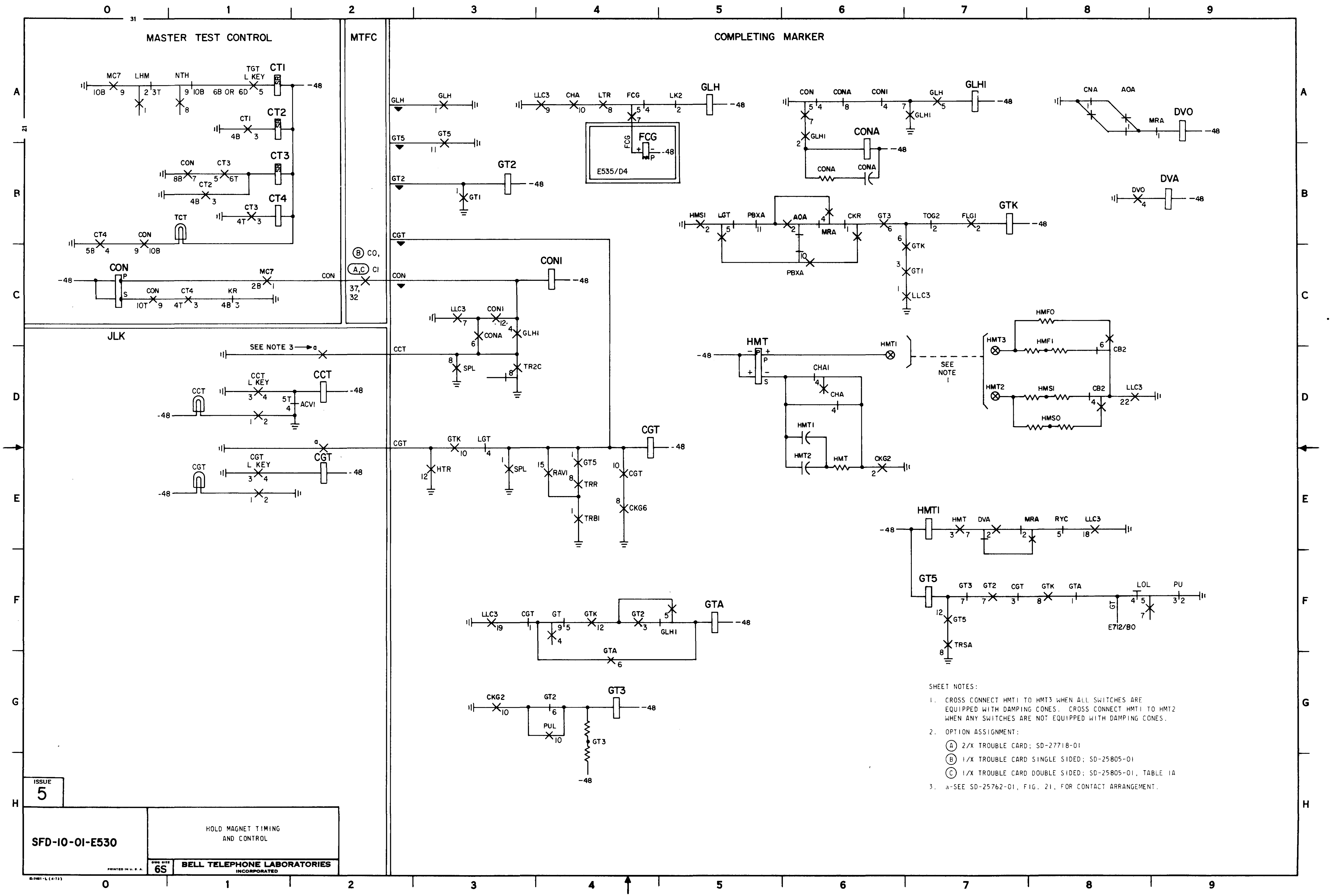
SFD-10-01-E529



SHEET NOTES:

1. CROSS CONNECT HMT1 TO HMT3 WHEN ALL SWITCHES ARE EQUIPPED WITH DAMPING CONES. CROSS CONNECT HMT1 TO HMT2 WHEN ANY SWITCHES ARE NOT EQUIPPED WITH DAMPING CONES.
2. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
3. a-SEE SD-25762-01, FIG. 21, FOR CONTACT ARRANGEMENT.

ISSUE
5

SFD-10-01-E530

HOLD MAGNET TIMING
AND CONTROL

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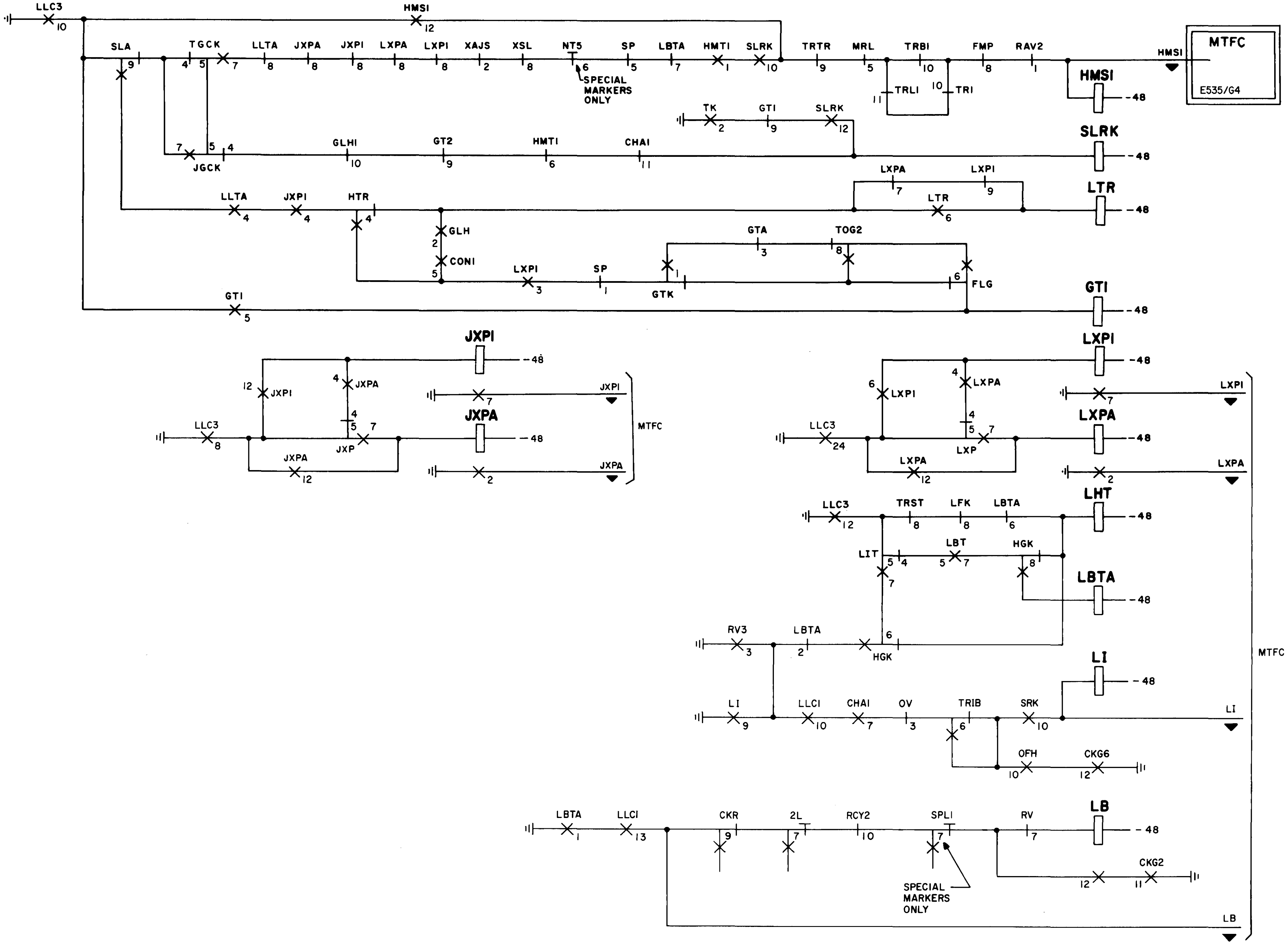
DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-E530

COMPLETING MARKER



HOLD MAGNET TIMING AND CONTROL

SFD-10-01-E531

ISSUE 5

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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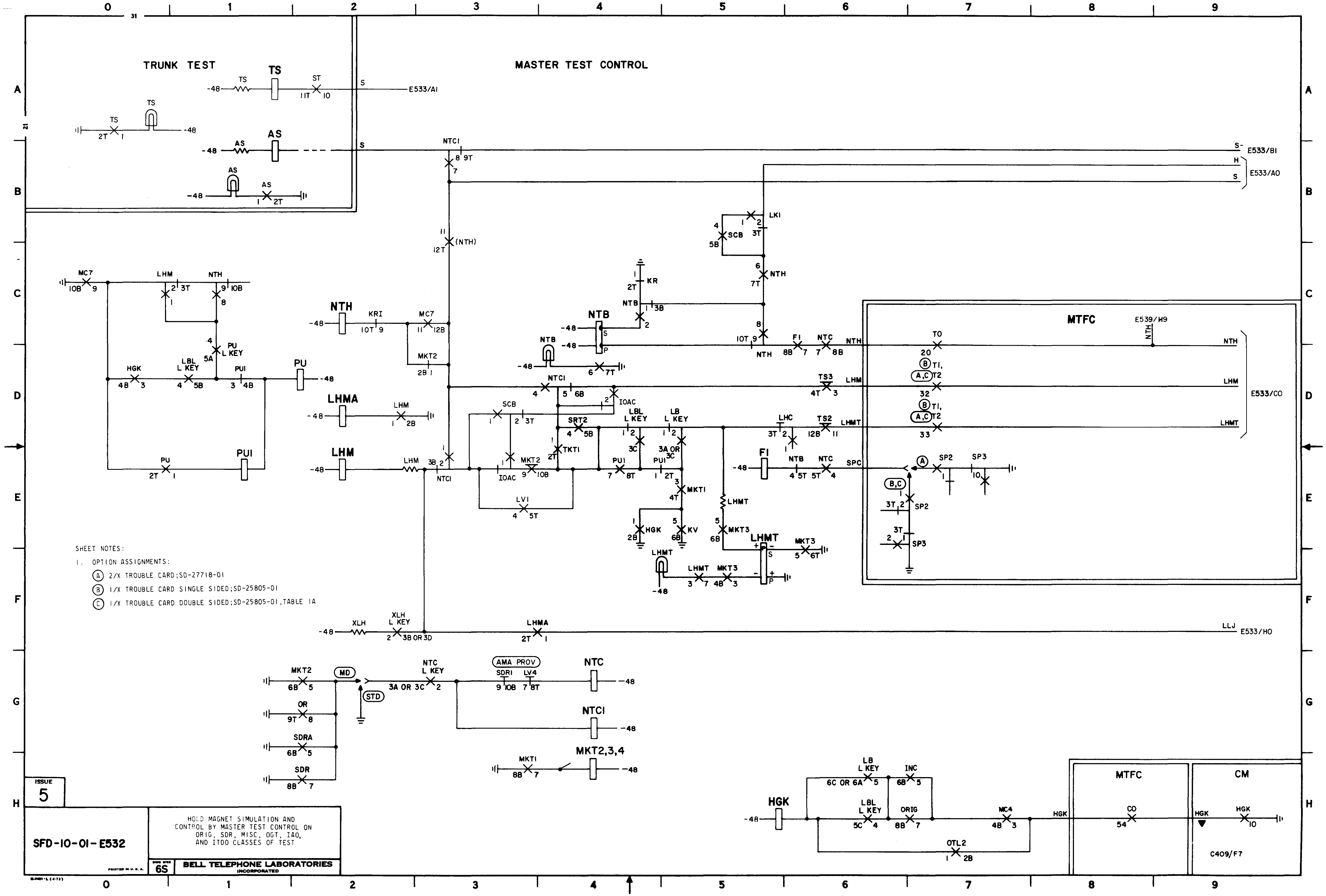
SFD-10-01-E531



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD;SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED;SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED;SD-25805-01,TABLE 1A

ISSUE
5

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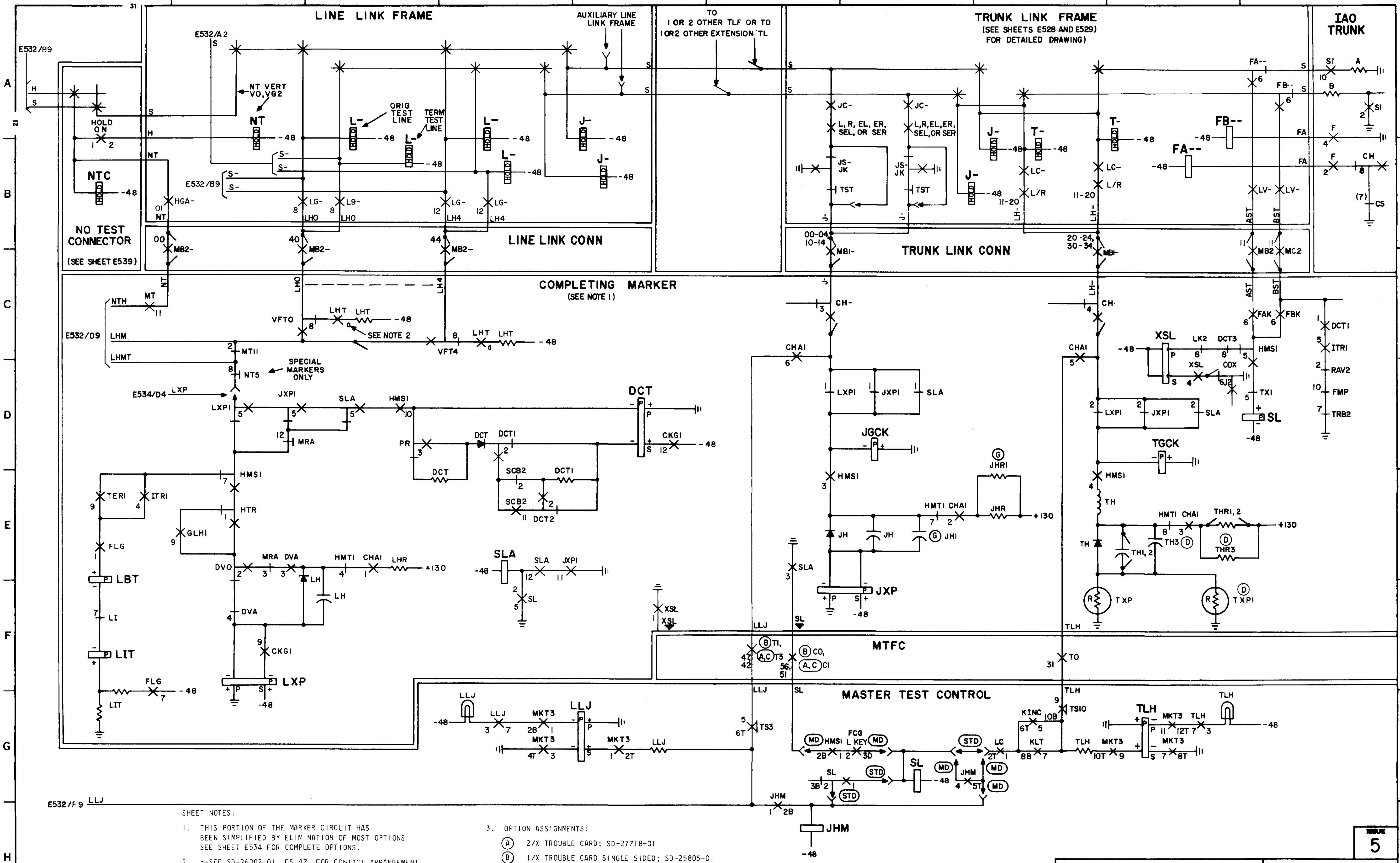
HOLD MAGNET SIMULATION AND
CONTROL BY MASTER TEST CONTROL ON
ORIG, SDR, MISC, OGT, IAO,
AND ITDO CLASSES OF TEST

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-3421-L (4-73)

SFD-10-01-E532



SHEET NOTES:

1. THIS PORTION OF THE MARKER CIRCUIT HAS BEEN SIMPLIFIED BY ELIMINATION OF MOST OPTIONS SEE SHEET E534 FOR COMPLETE OPTIONS.

2. a-SEE SD-26002-01, FS 47, FOR CONTACT ARRANGEMENT.

3. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓓ TRIPLE TRUNK LINK
   - Ⓖ PAIRED LINE LINK

ISSUE 5

LINKAGE CHECK AND HOLD
MAGNET OPERATION

SFD-10-01-E533

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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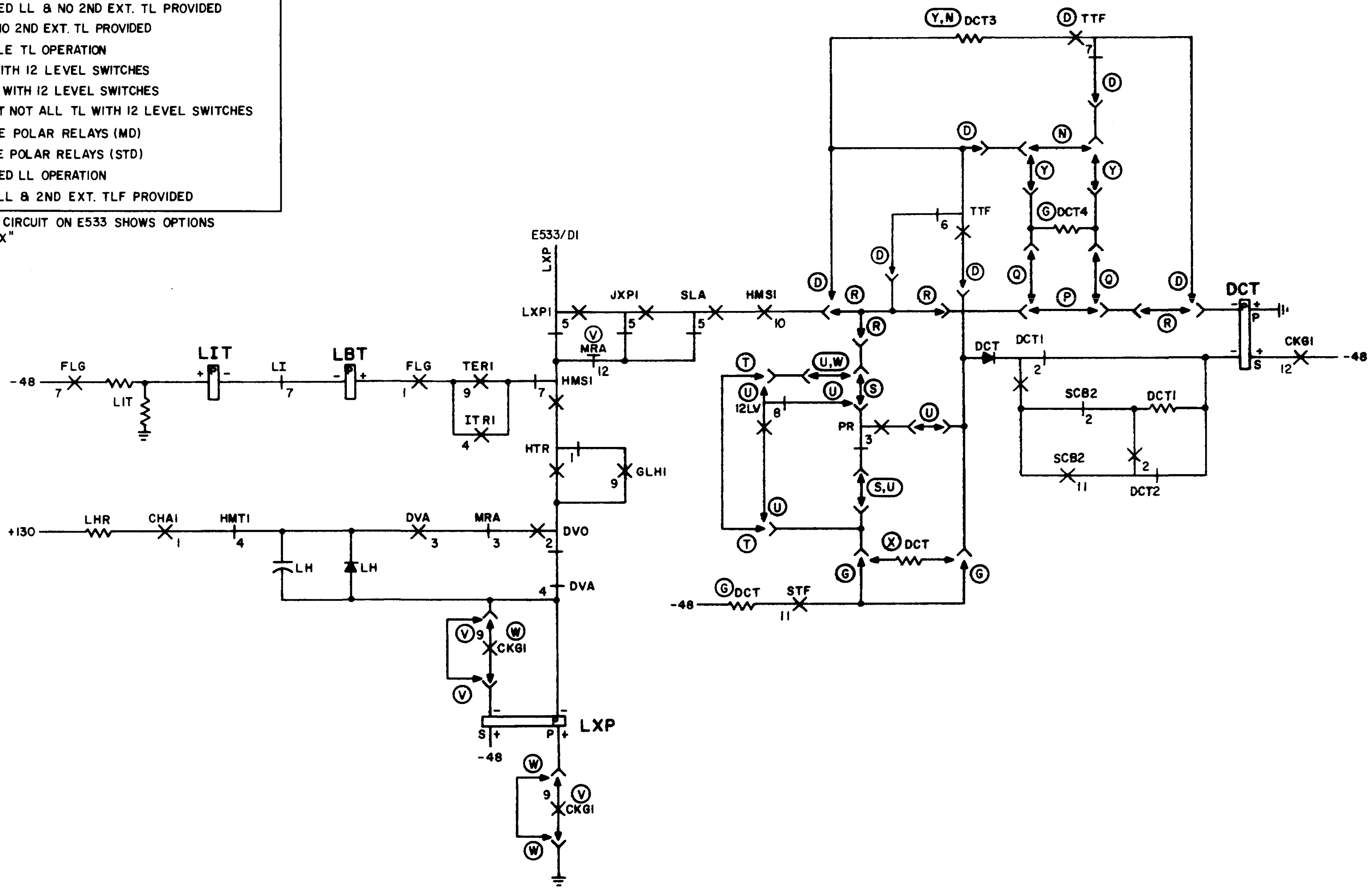
SFD-10-01-E533

COMPLETING MARKER

OPT	FEATURE
Ⓓ	TRIPLE TL PROVIDED
Ⓖ	PAIRED LL OPERATION
Ⓝ	NO PAIRED LL & 2ND EXT. TL PROVIDED
Ⓟ	NO PAIRED LL & NO 2ND EXT. TL PROVIDED
Ⓠ	PLL & NO 2ND EXT. TL PROVIDED
Ⓡ	NO TRIPLE TL OPERATION
Ⓢ	NO TL WITH 12 LEVEL SWITCHES
Ⓣ	ALL TL WITH 12 LEVEL SWITCHES
Ⓤ	ANY BUT NOT ALL TL WITH 12 LEVEL SWITCHES
Ⓥ	280 TYPE POLAR RELAYS (MD)
Ⓦ	316 TYPE POLAR RELAYS (STD)
Ⓧ	NO PAIRED LL OPERATION
Ⓨ	PAIRED LL & 2ND EXT. TLF PROVIDED

MARKER CIRCUIT ON E533 SHOWS OPTIONS "P,R,S,& X"



ISSUE
5

SFD-10-01-E534

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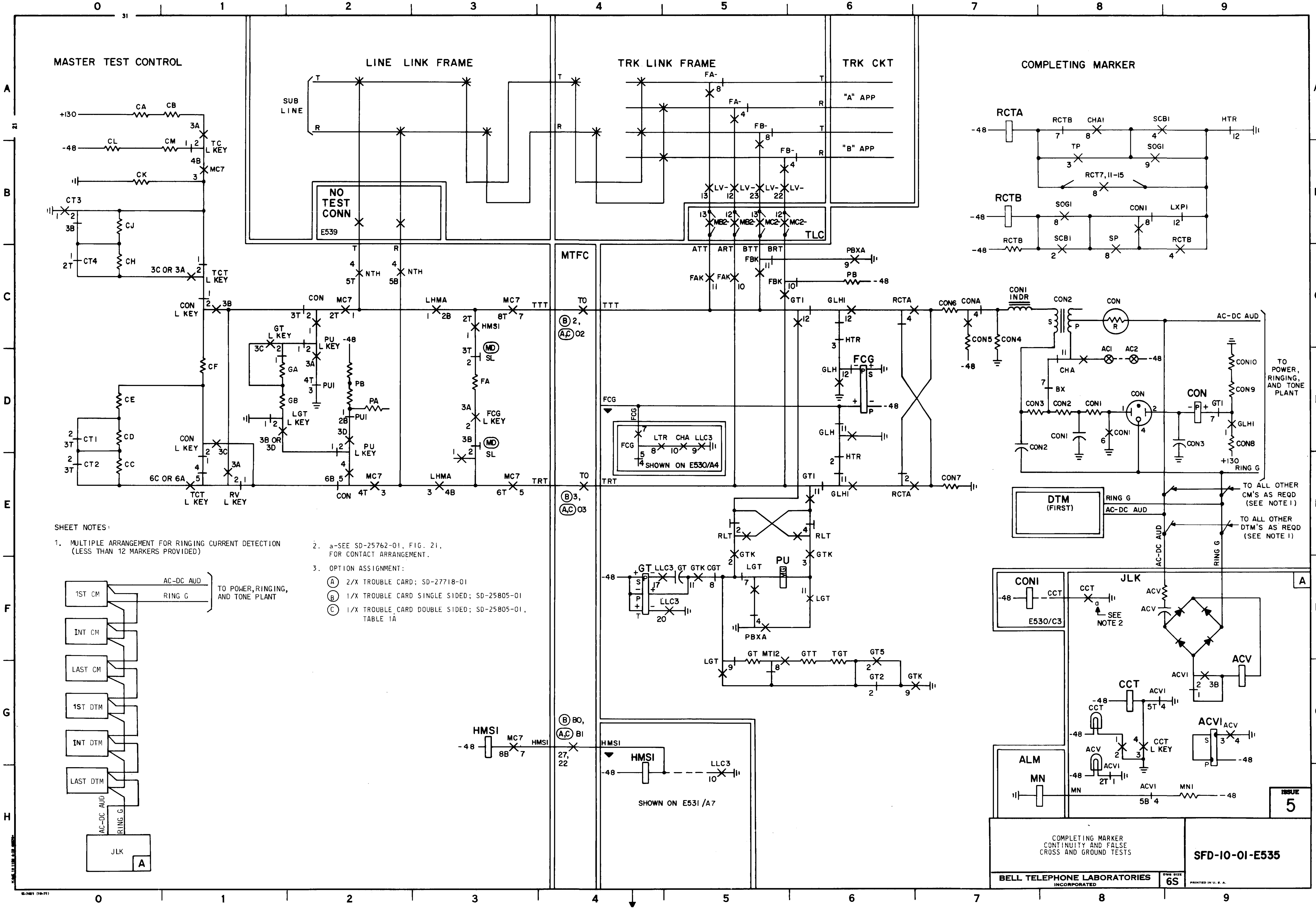
OPTIONAL ARRANGEMENTS
FOR HOLD MAGNET
OPERATION

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)



SHEET NOTES:

1. MULTIPLE ARRANGEMENT FOR RINGING CURRENT DETECTION (LESS THAN 12 MARKERS PROVIDED)

2. a-SEE SD-25762-01, FIG. 21, FOR CONTACT ARRANGEMENT.

3. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

COMPLETING MARKER
CONTINUITY AND FALSE
CROSS AND GROUND TESTS

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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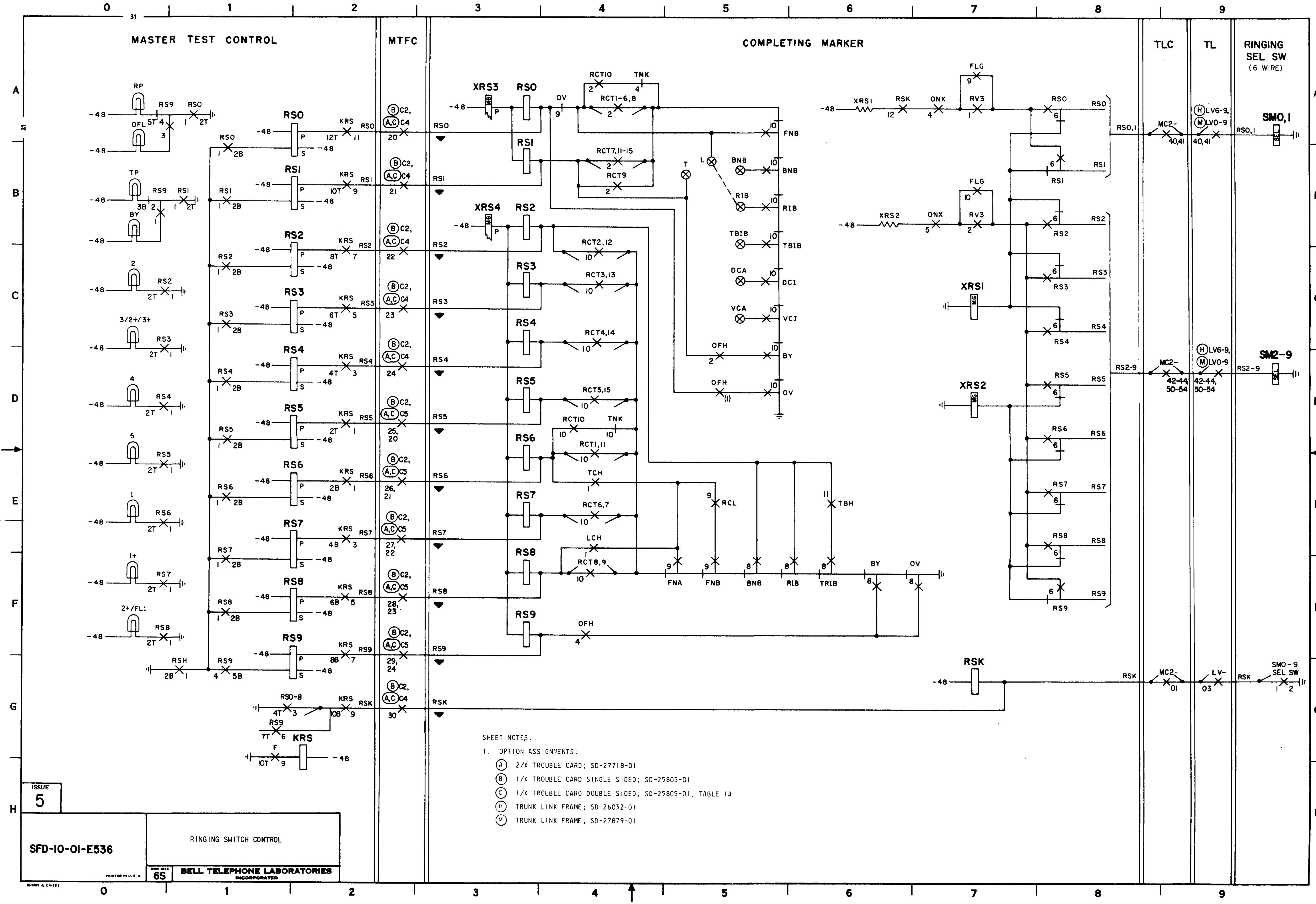
SFD-10-01-E535



SHEET NOTES:

1. OPTION ASSIGNMENTS:

- Ⓐ 2/X TROUBLE CARD; SD-27718-01
- Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
- Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
- Ⓗ TRUNK LINK FRAME; SD-26032-01
- Ⓜ TRUNK LINK FRAME; SD-27879-01

ISSUE 5

SFD-10-01-E536

RINGING SWITCH CONTROL

6S

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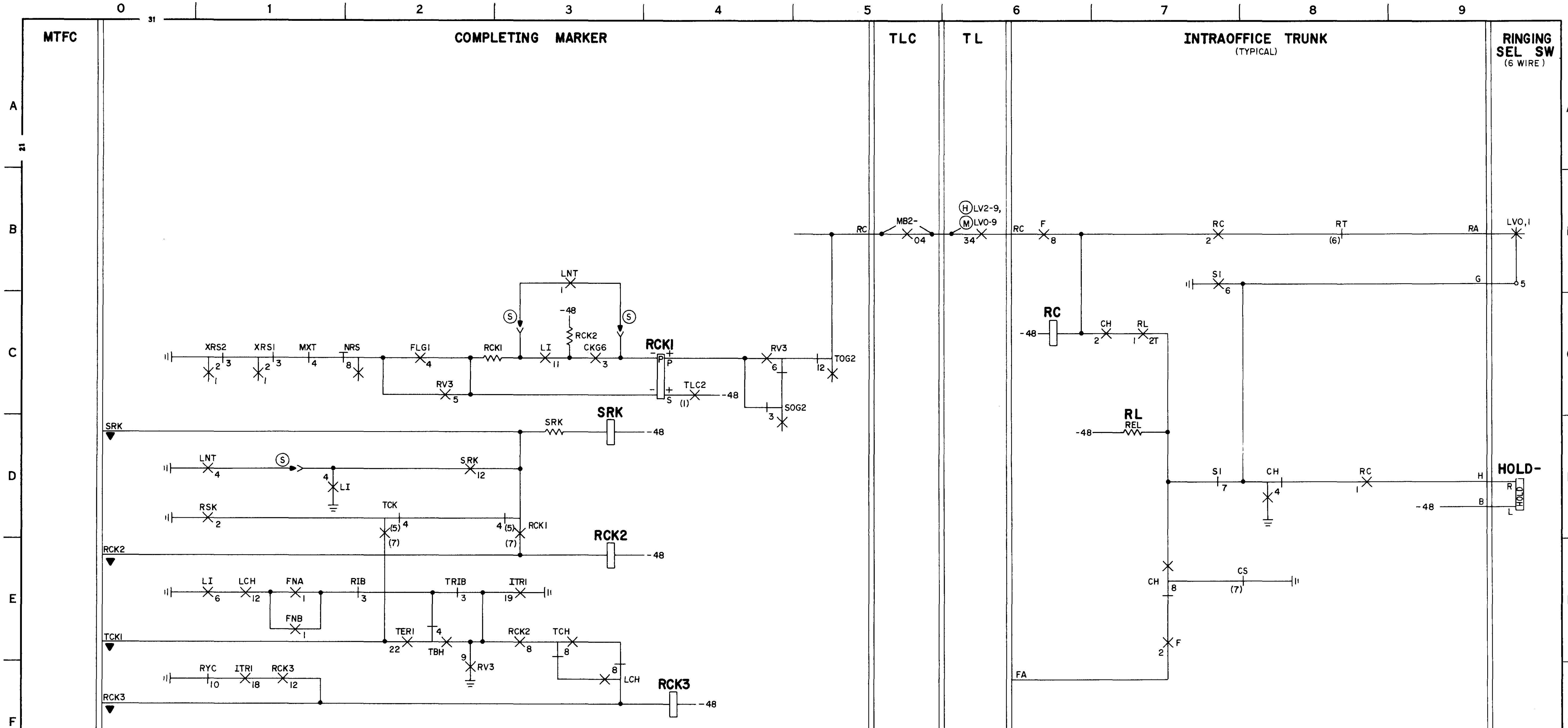
SFD-10-01-E536



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓗ TRUNK LINK FRAME; SD-26032-01
Ⓜ TRUNK LINK FRAME; SD-27879-01
Ⓢ SPECIAL MARKERS ONLY

ISSUE
5

RINGING SWITCH CONTROL

SFD-10-01-E537

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INCORPORATED

DWG SIZE 6S

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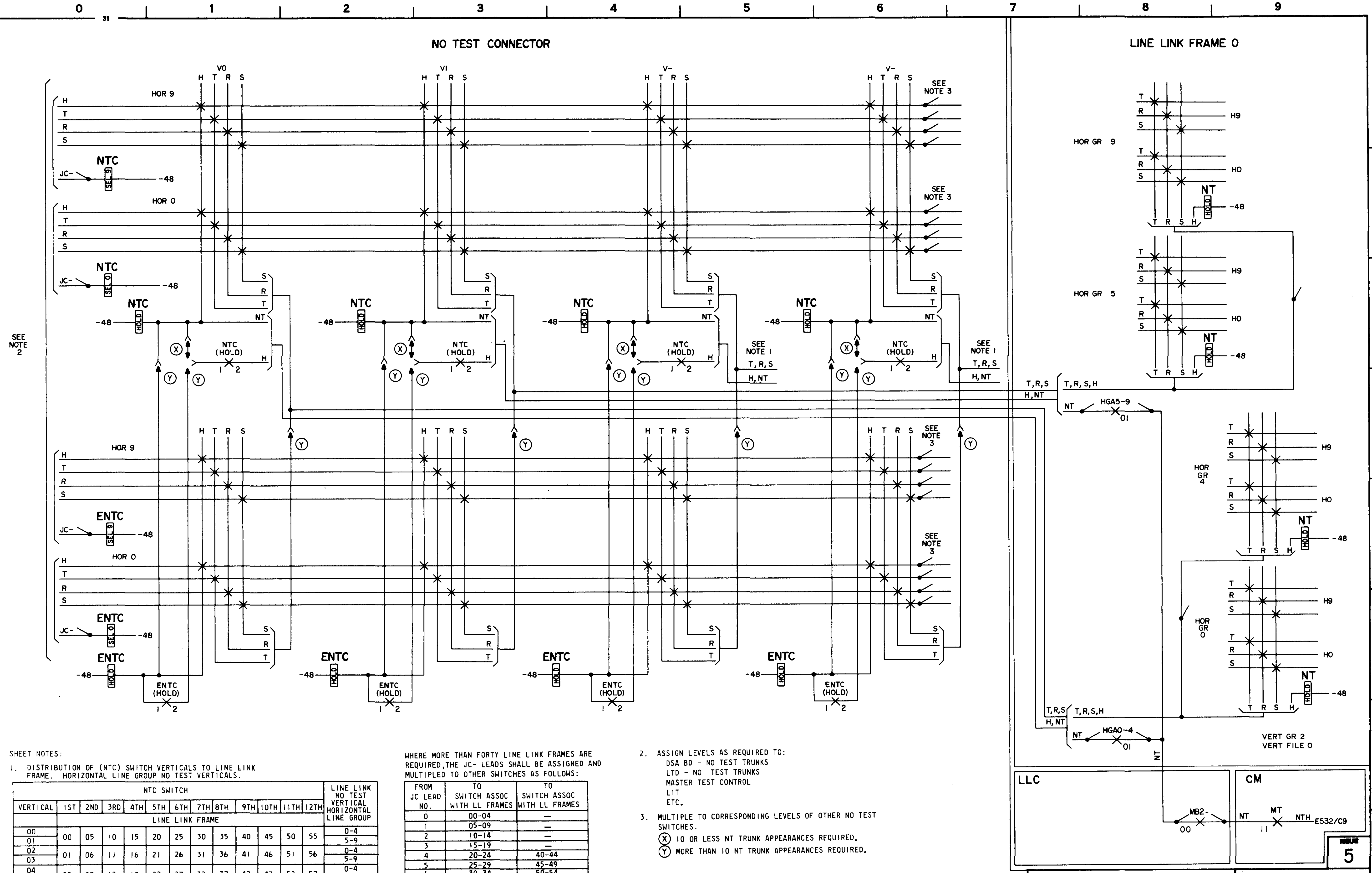
E-7421 (10-71)

SFD-10-01-E537



SHEET NOTES:

1. DISTRIBUTION OF (NTC) SWITCH VERTICALS TO LINE LINK FRAME. HORIZONTAL LINE GROUP NO TEST VERTICALS.

NTC SWITCH													LINE LINK NO TEST VERTICAL HORIZONTAL LINE GROUP
VERTICAL	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	
	LINE LINK FRAME												
00	00	05	10	15	20	25	30	35	40	45	50	55	0-4
01													5-9
02	01	06	11	16	21	26	31	36	41	46	51	56	0-4
03													5-9
04	02	07	12	17	22	27	32	37	42	47	52	57	0-4
05													5-9
06	03	08	13	18	23	28	33	38	43	48	53	58	0-4
07													5-9
08	04	09	14	19	24	29	34	39	44	49	54	59	0-4
09													5-9

WHERE MORE THAN FORTY LINE LINK FRAMES ARE REQUIRED, THE JC- LEADS SHALL BE ASSIGNED AND MULTIPLED TO OTHER SWITCHES AS FOLLOWS:

FROM JC LEAD NO.	TO SWITCH ASSOC WITH LL FRAMES	TO SWITCH ASSOC WITH LL FRAMES
0	00-04	—
1	05-09	—
2	10-14	—
3	15-19	—
4	20-24	40-44
5	25-29	45-49
6	30-34	50-54
7	35-39	55-59

2. ASSIGN LEVELS AS REQUIRED TO:
   - DSA BD - NO TEST TRUNKS
   - LTD - NO TEST TRUNKS
   - MASTER TEST CONTROL
   - LIT
   - ETC.

3. MULTIPLE TO CORRESPONDING LEVELS OF OTHER NO TEST SWITCHES.

Ⓧ 10 OR LESS NT TRUNK APPEARANCES REQUIRED.
Ⓨ MORE THAN 10 NT TRUNK APPEARANCES REQUIRED.

ISSUE 5

NO TEST CONNECTOR

SFD-10-01-E539

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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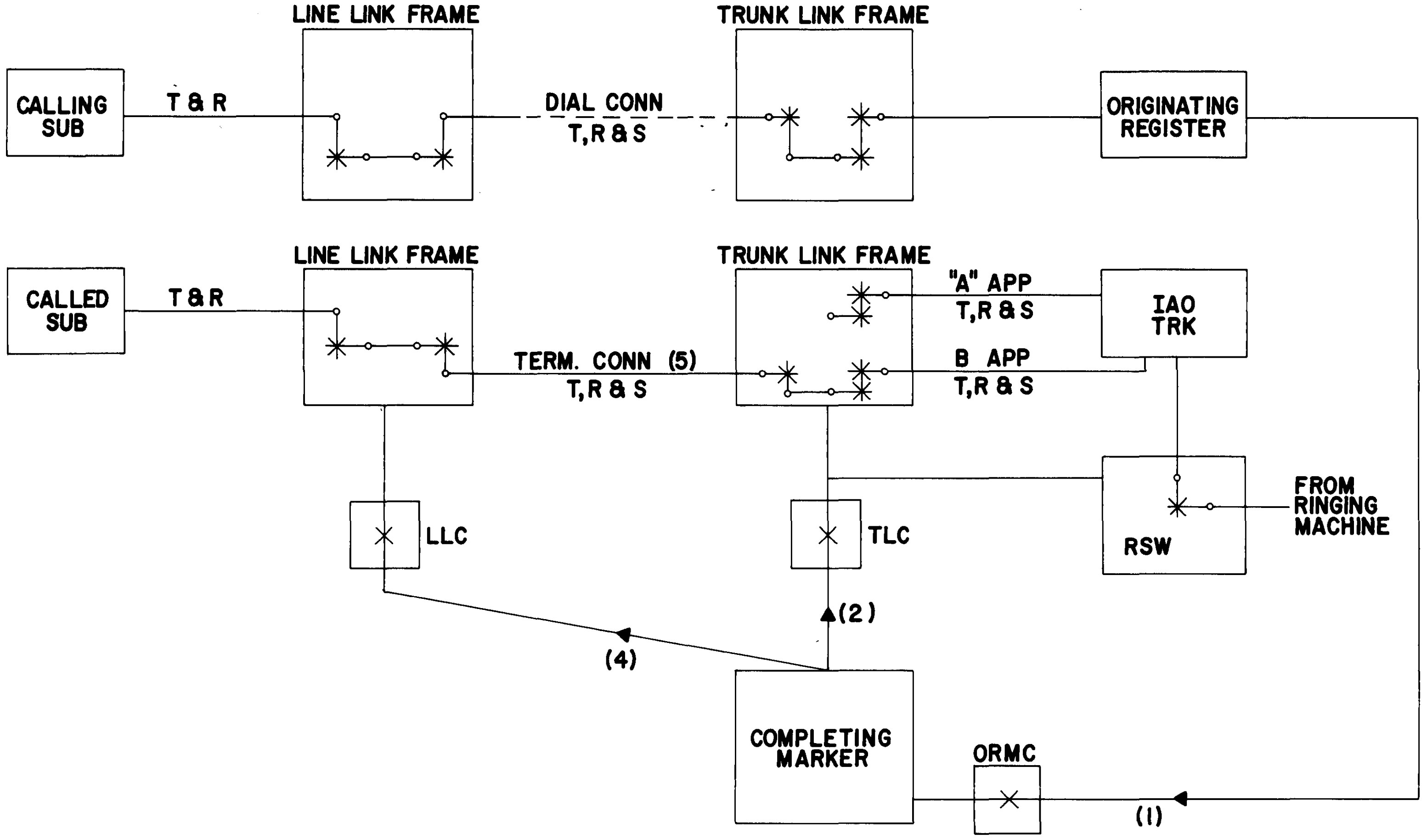
SFD-10-01-E539

E-7421 (10-71)

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



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E602	SEQUENCE CHART CHANNEL PREPARATION AND CONNECTION TO LINE LINK (SC B)
E603	LINE LOCATION CONTROL
E604	LINE LINK FRAME LOCKOUT
E605	GROUND TRANSMITTING AND START CALL BACK CONTROL

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE
5

PART E6
CONNECTION TO LINE LINK
(SCB)

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

SFD-10-01-E601

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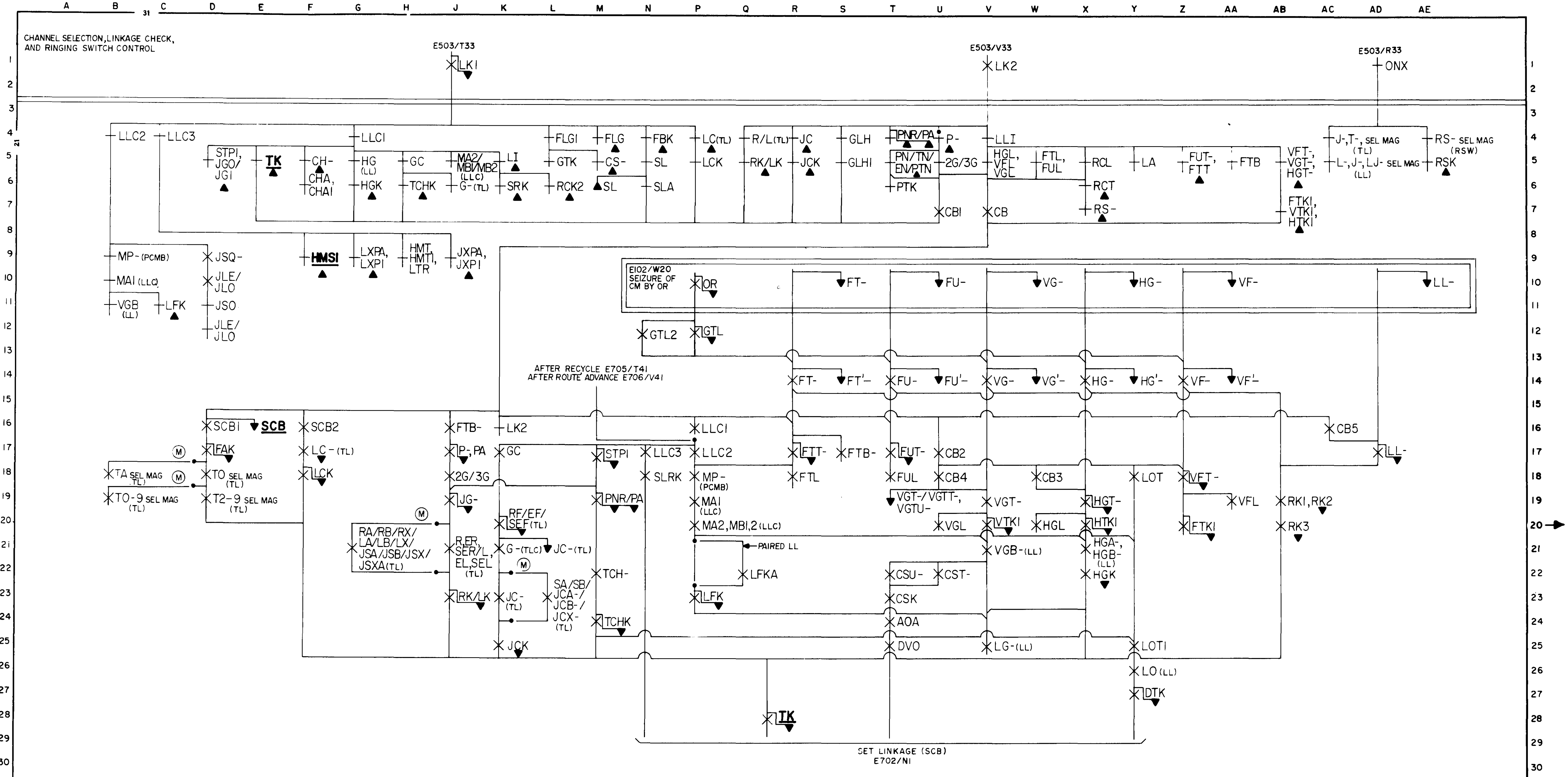
SFD-10-01-E601
2 SHEETS, SHEET 1

E-1421 (10-71)

CHANNEL SELECTION, LINKAGE CHECK, AND RINGING SWITCH CONTROL



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓜ TRUNK LINK FRAME (SD-27879-01)

ISSUE 5

SFD-10-01-E602

SEQUENCE CHART
CHANNEL PREPARATION AND
CONNECTION TO LINE LINK
(SCB)

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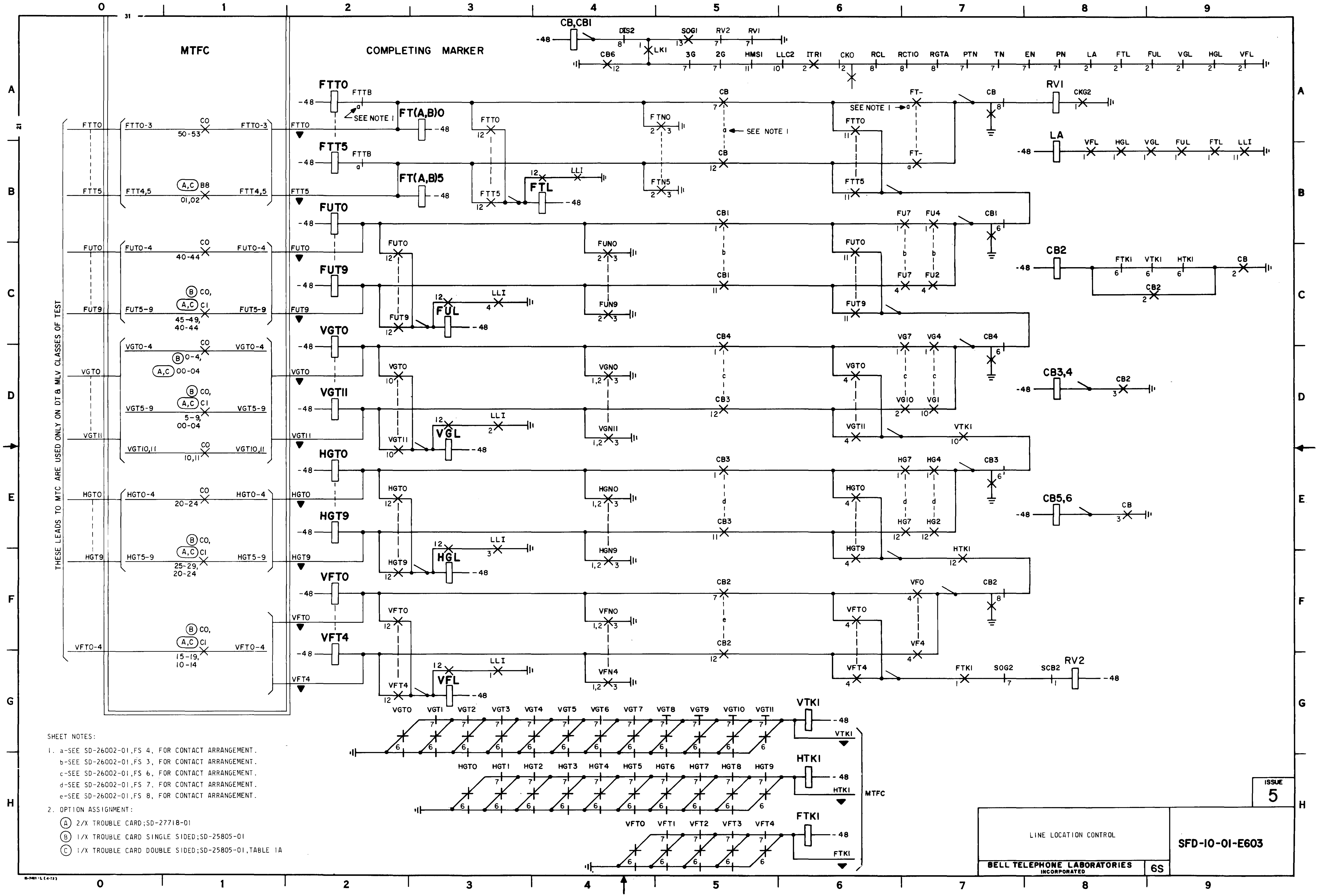
CBL-267(10-75)

SFD-10-01-E602

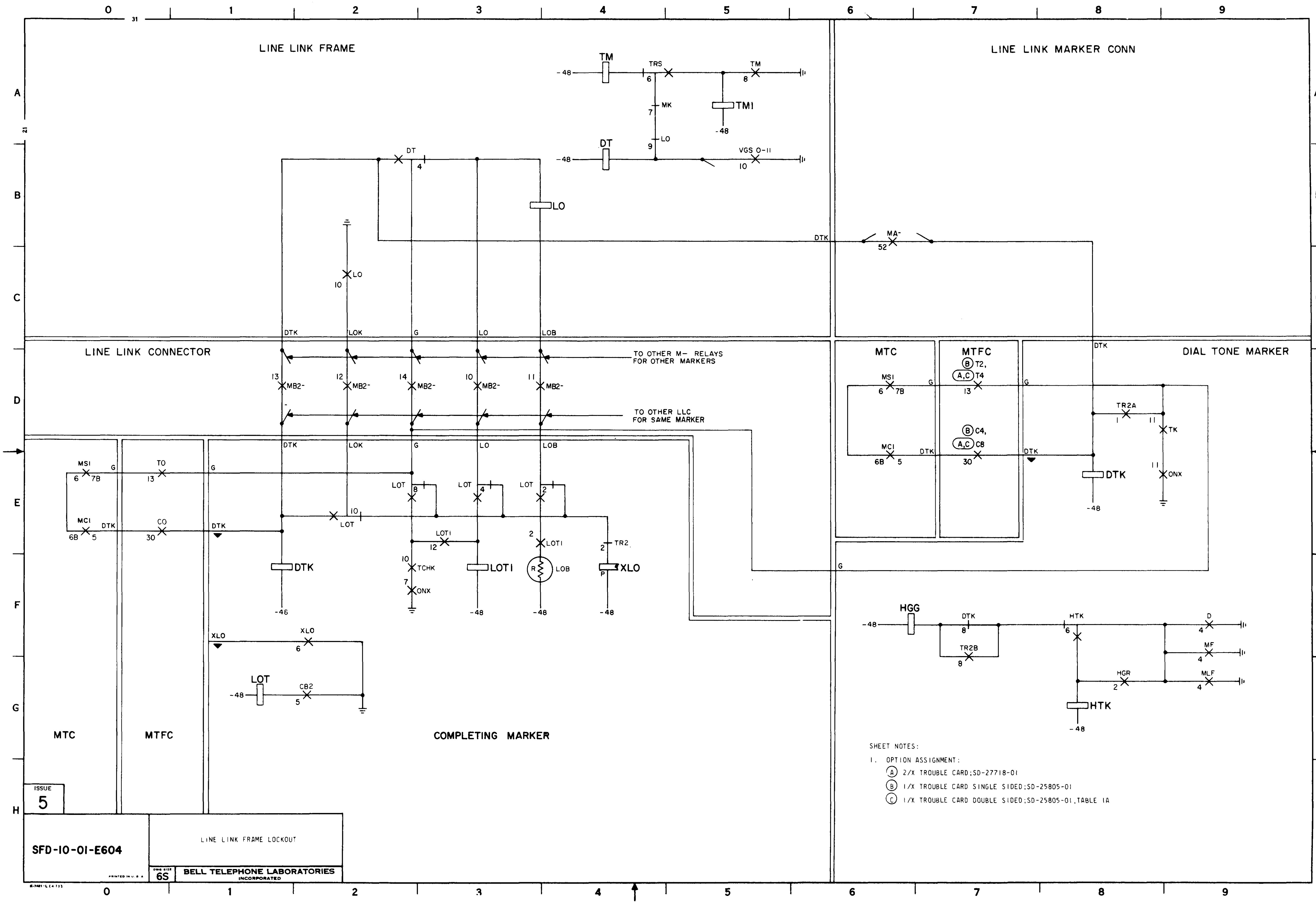


SHEET NOTES:

1. a-SEE SD-26002-01,FS 4, FOR CONTACT ARRANGEMENT.
   b-SEE SD-26002-01,FS 3, FOR CONTACT ARRANGEMENT.
   c-SEE SD-26002-01,FS 6, FOR CONTACT ARRANGEMENT.
   d-SEE SD-26002-01,FS 7, FOR CONTACT ARRANGEMENT.
   e-SEE SD-26002-01,FS 8, FOR CONTACT ARRANGEMENT.
2. OPTION ASSIGNMENT:
   Ⓐ 2/X TROUBLE CARD;SD-27718-01
   Ⓑ 1/X TROUBLE CARD SINGLE SIDED;SD-25805-01
   Ⓒ 1/X TROUBLE CARD DOUBLE SIDED;SD-25805-01,TABLE 1A

ISSUE	5
LINE LOCATION CONTROL	SFD-10-01-E603
BELL TELEPHONE LABORATORIES INCORPORATED	6S

SFD-10-01-E603



SHEET NOTES:

1. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD;SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED;SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED;SD-25805-01,TABLE 1A

ISSUE 5

SFD-10-01-E604

LINE LINK FRAME LOCKOUT

DWG SIZE 6S

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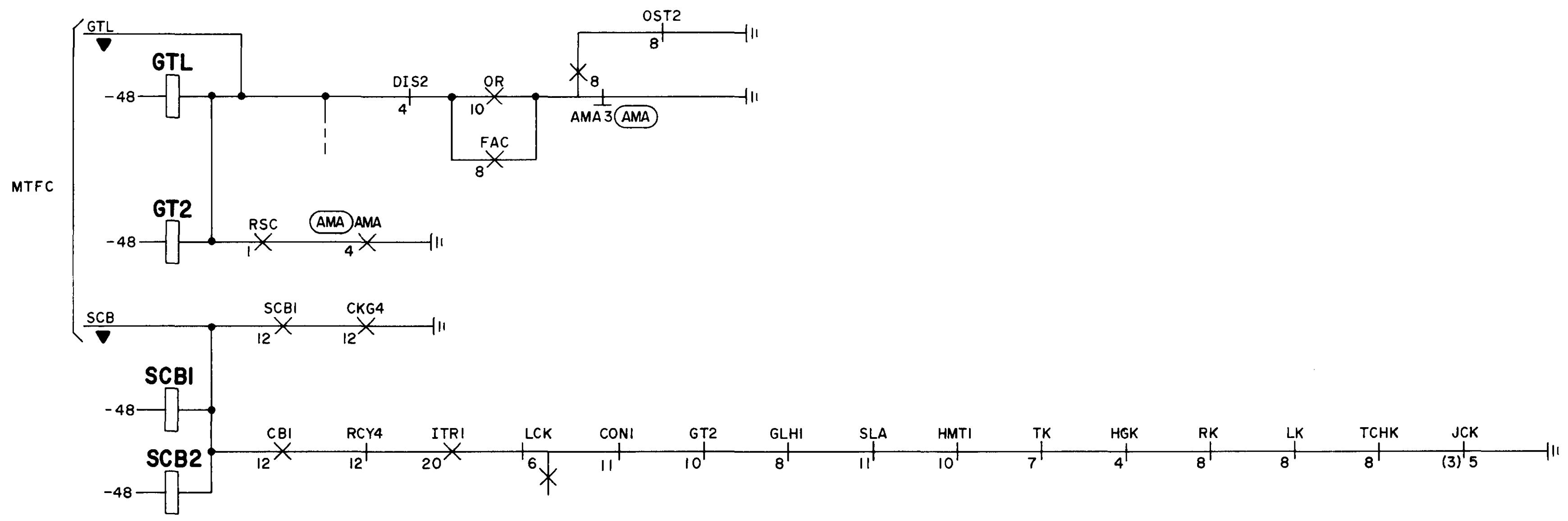
E-7421-L (4-73)

SFD-10-01-E604

COMPLETING MARKER



GROUND TRANSMITTING
AND START CALL BACK CONTROL

SFD-10-01-E605

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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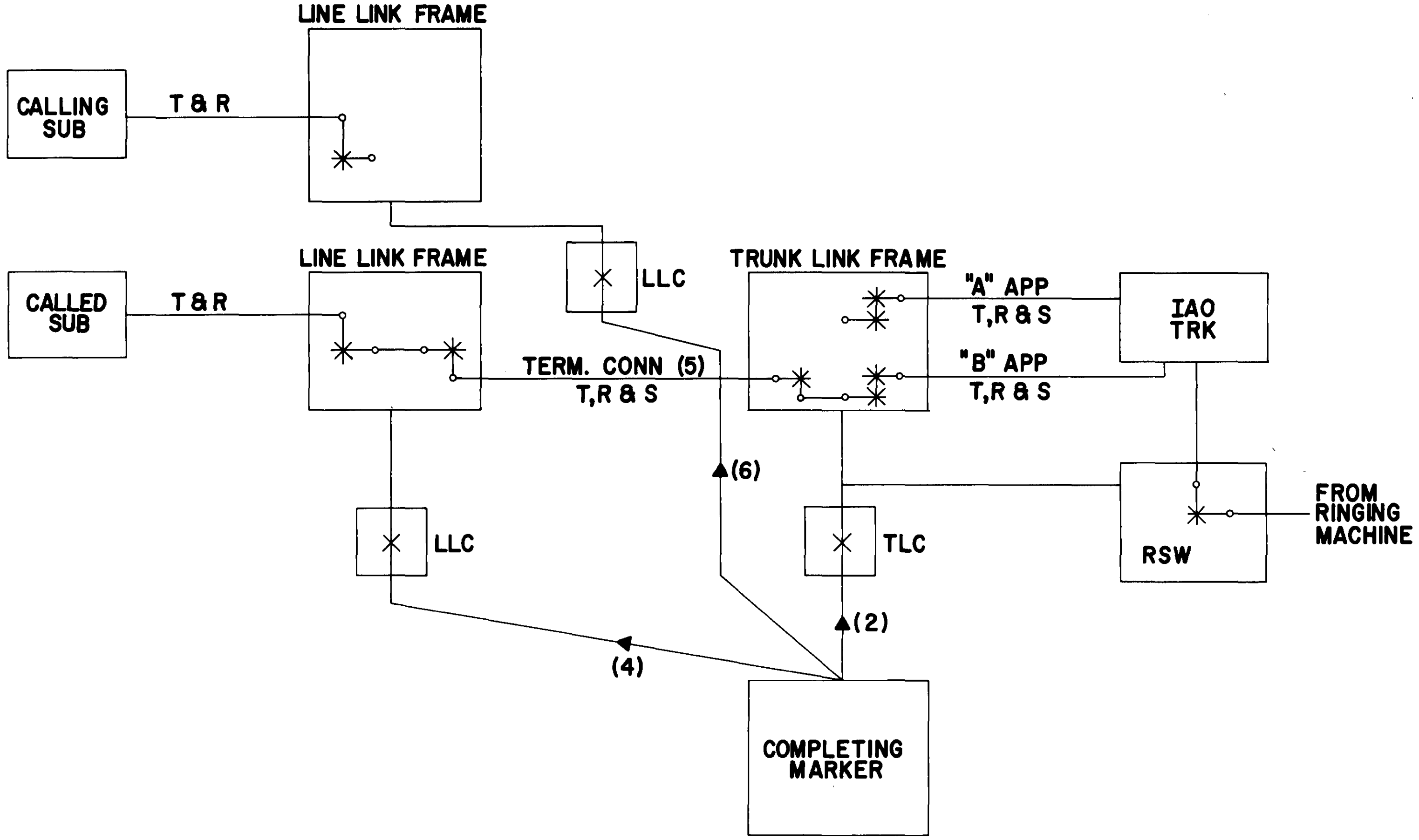
ISSUE 5

E-7421 (10-71)

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



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E706	SEQUENCE CHART- JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE.
E707	SEQUENCE CHART- JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE.
E708	SEQUENCE CHART- JUNCTOR SEQUENCE CONTROL
E709	SEQUENCE CHART- CONTROL OF CHANNEL SELECTION BY MASTER TEST CONTROL.
E710	ESTABLISHED CONNECTION INTRAOFFICE CALL
E711	RINGING SWITCH CONNECTION INTRAOFFICE CALL.
E712	COMPLETING MARKER DOUBLE CONNECTION AND LINKAGE CHECK.

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

SFD-10-01-E701
2 SHEETS, SHEET 1

ISSUE 5

PART E7
NETWORK CONNECTION
(SCB)

SFD-10-01-E701

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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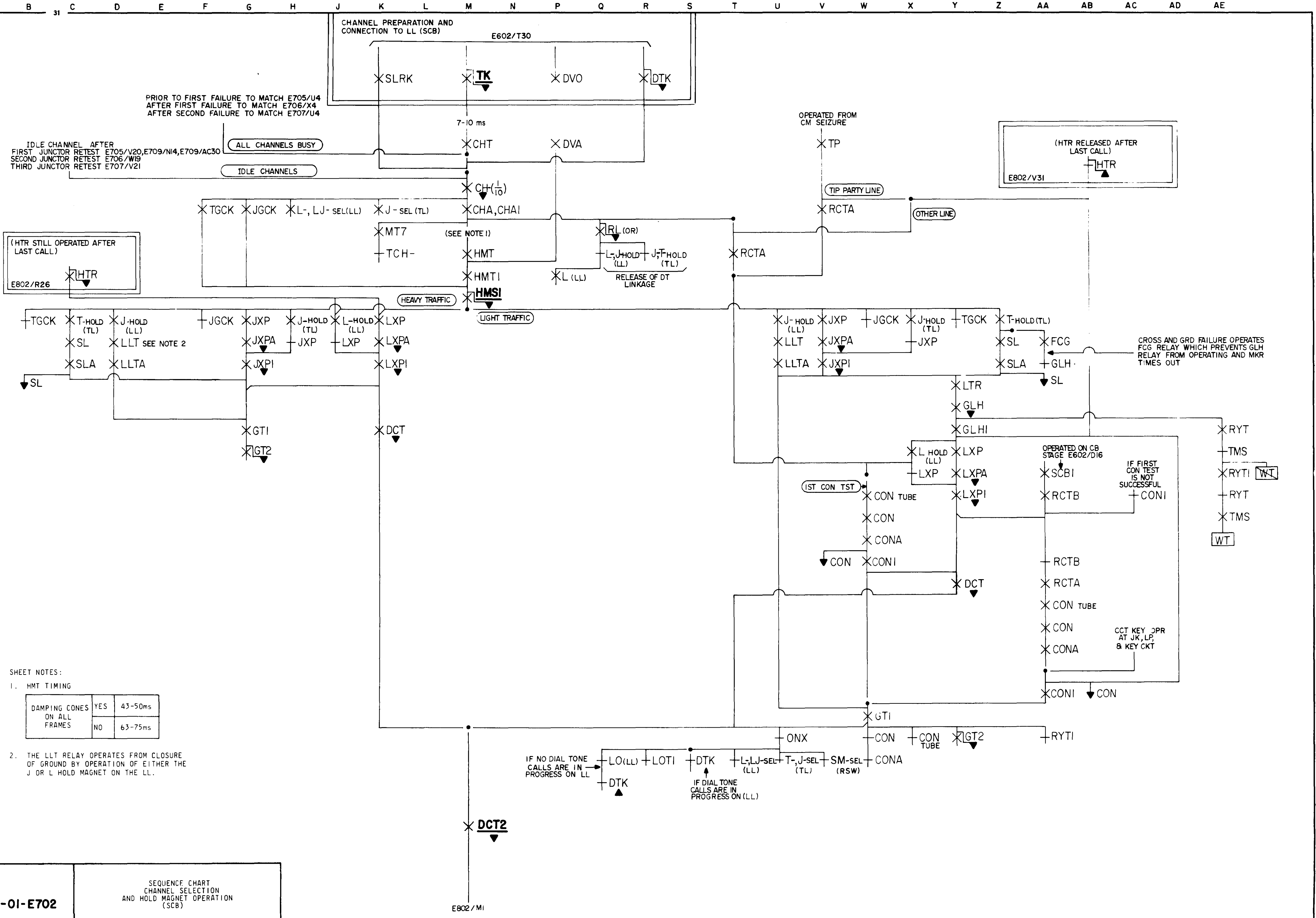
E-7421 (10-71)



SHEET NOTES:

1. HMT TIMING

DAMPING CONES ON ALL FRAMES	YES	43-50ms
	NO	63-75ms

2. THE LLT RELAY OPERATES FROM CLOSURE OF GROUND BY OPERATION OF EITHER THE J OR L HOLD MAGNET ON THE LL.

ISSUE
5

SFD-10-01-E702

SEQUENCE CHART
CHANNEL SELECTION
AND HOLD MAGNET OPERATION
(SCB)

DWG SIZE 6S

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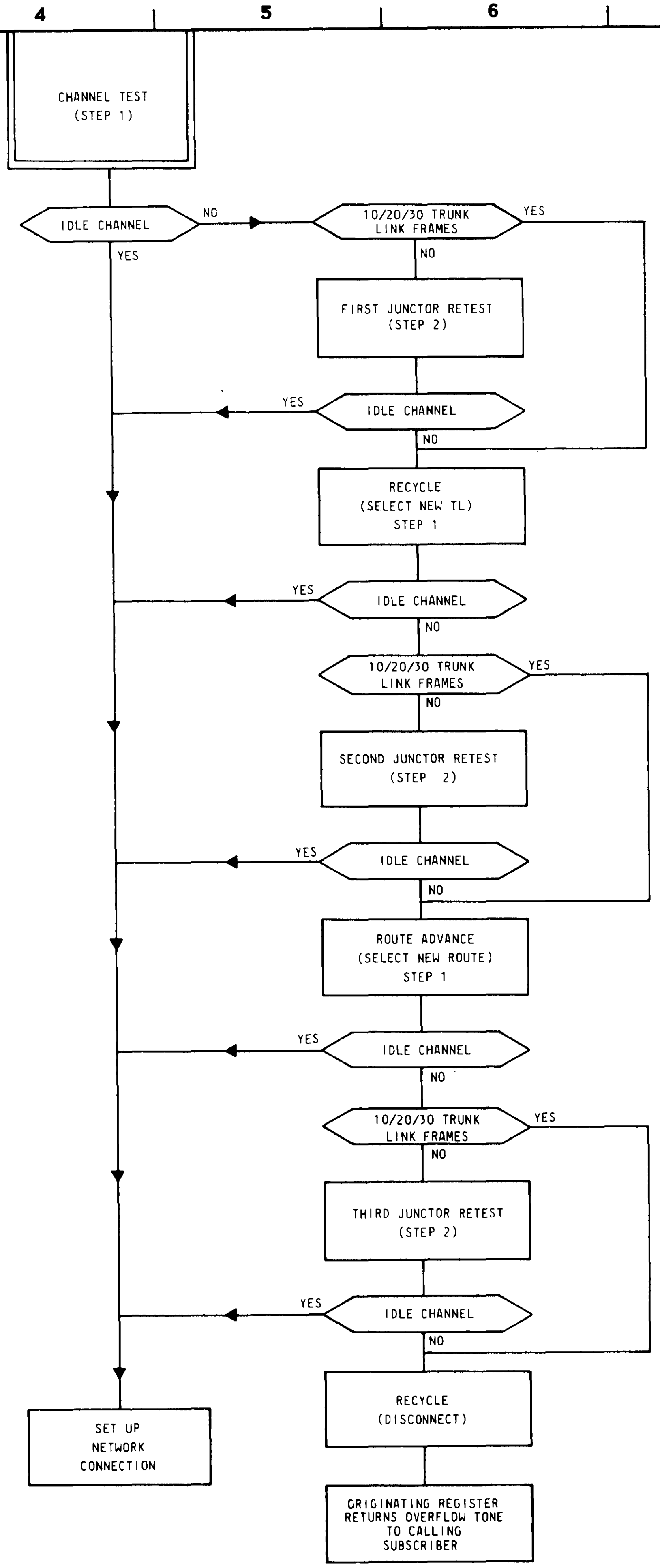
E-7481-L (4-73)

SFD-10-01-E702



ISSUE
5

SFD-10-01-E704

FLOW CHART
JUNCTOR RETEST, RECYCLE,
AND ROUTE ADVANCE

6S

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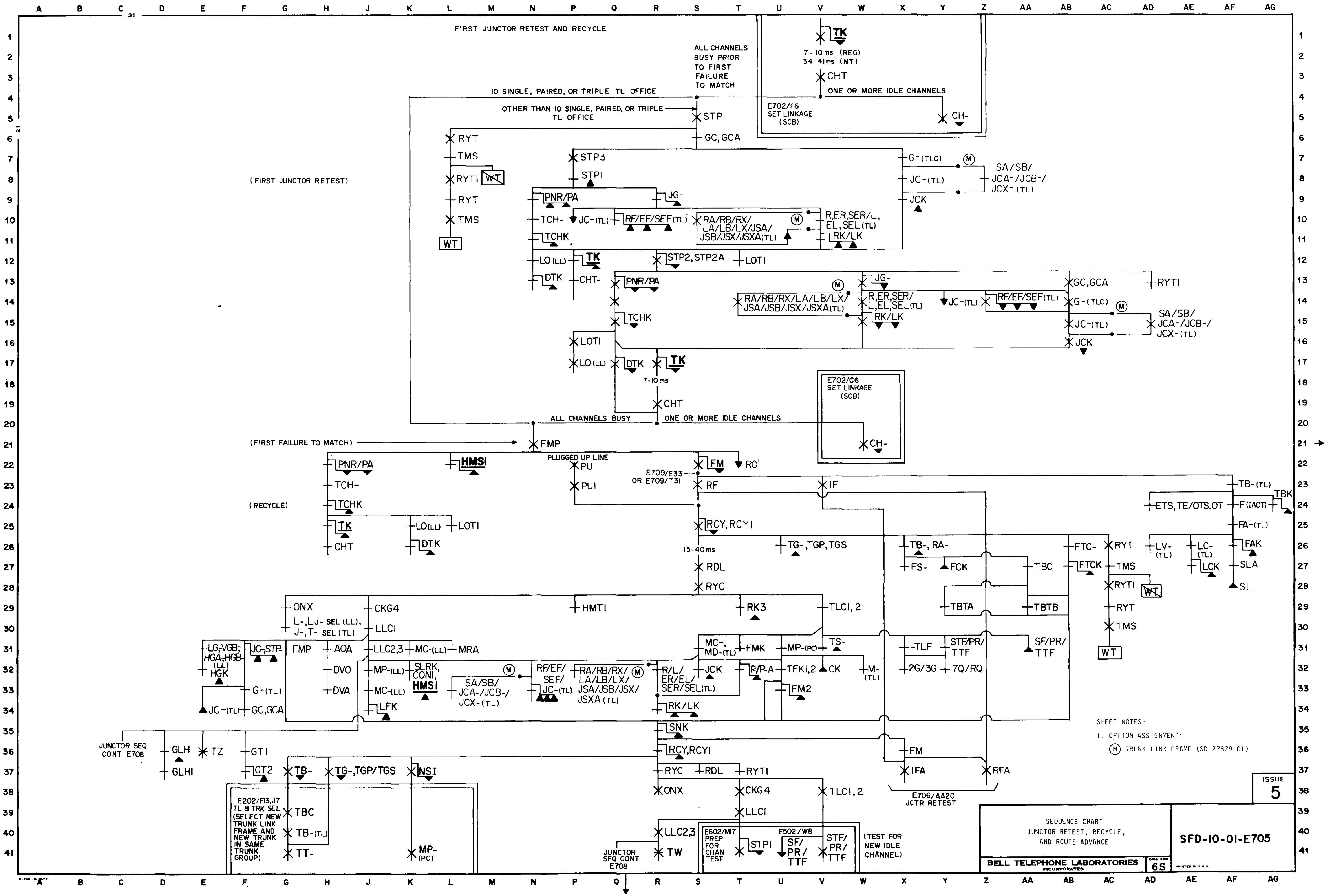

SHEET NOTES:

1. OPTION ASSIGNMENT:

Ⓜ TRUNK LINK FRAME (SD-27879-01).

ISSUE 5

SEQUENCE CHART
JUNCTOR RETEST, RECYCLE,
AND ROUTE ADVANCE

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6S

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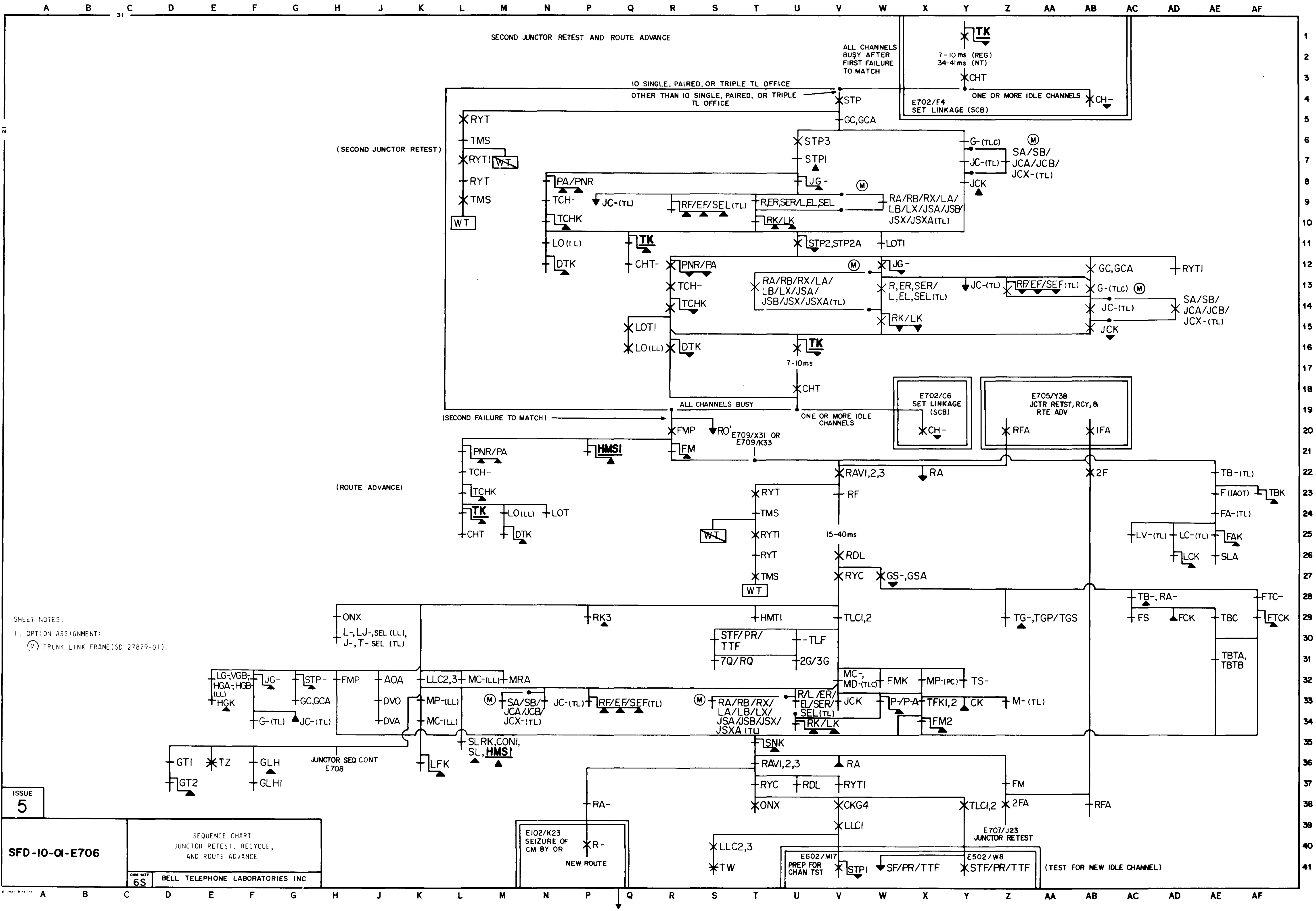
SFD-10-01-E705

SFD-10-01-E705



SHEET NOTES:

1. OPTION ASSIGNMENT:

Ⓜ TRUNK LINK FRAME (SD-27879-01).

ISSUE
5

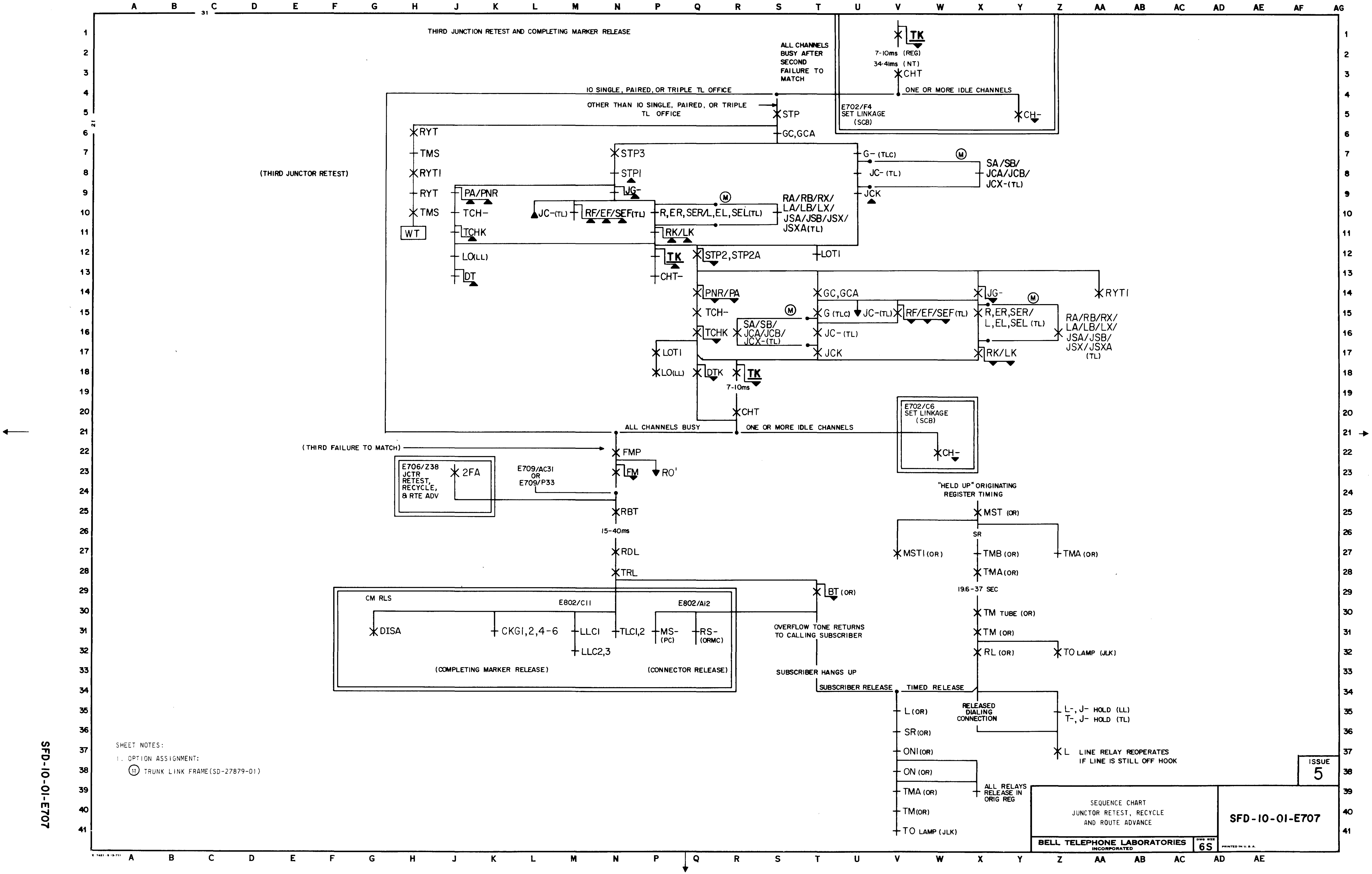
SFD-10-01-E706

SEQUENCE CHART
JUNCTOR RETEST, RECYCLE,
AND ROUTE ADVANCE

6S

BELL TELEPHONE LABORATORIES INC

SFD-10-01-E706



SHEET NOTES:

1. OPTION ASSIGNMENT:
   Ⓜ TRUNK LINK FRAME (SD-27879-01)

ISSUE 5

SEQUENCE CHART
JUNCTOR RETEST, RECYCLE
AND ROUTE ADVANCE

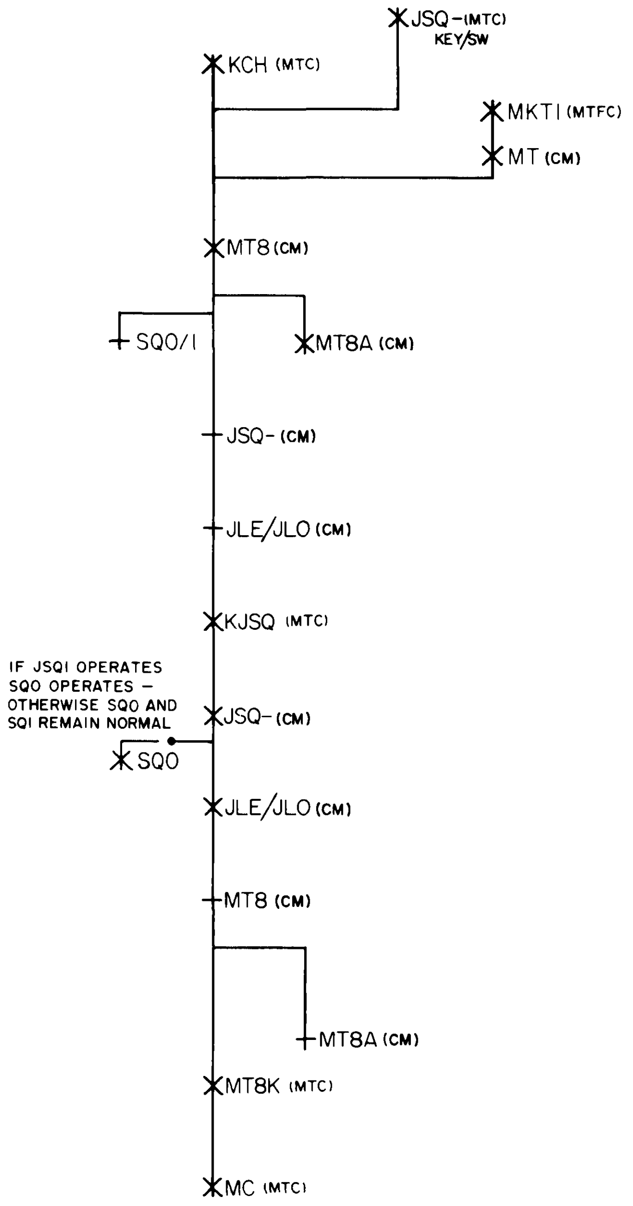
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

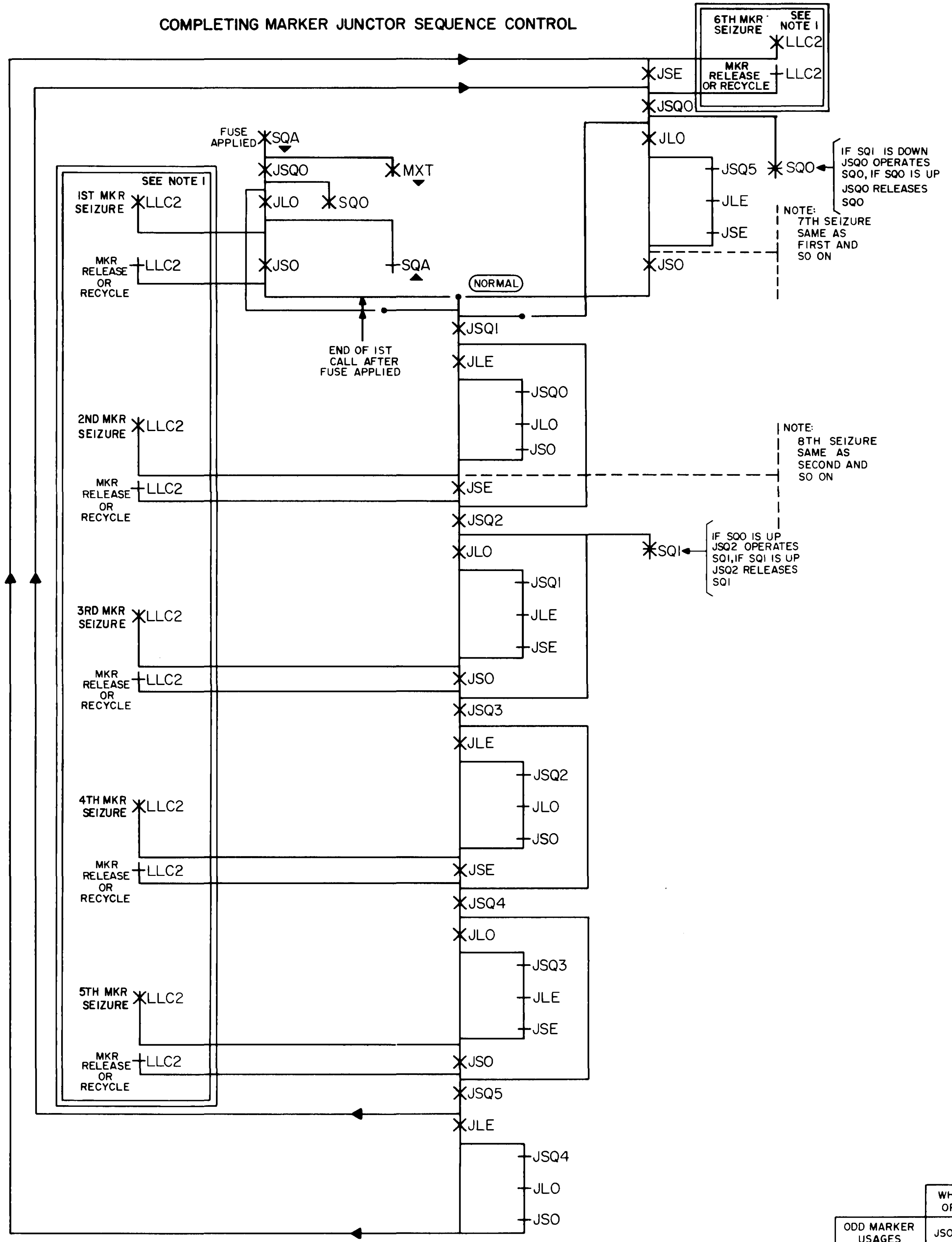
SFD-10-01-E707

SFD-10-01-E707

COMPLETING MARKER JUNCTOR SEQUENCE CONTROL (TEST CALL)



COMPLETING MARKER JUNCTOR SEQUENCE CONTROL



SHEET NOTES:

1. LLC2 IS OPERATED AT THE BEGINNING OF EACH MARKER SEIZURE (E102/X13) OR AFTER RECYCLE (E705/R40).

   LLC2 IS RELEASED UPON MARKER RELEASE (E803/M14) OR UPON START OF MARKER RECYCLE (E705/J31).

	WHEN LLC2 OPERATES	WHEN LLC2 RELEASES
ODD MARKER USAGES	JSO OPERATES	JSQ1,3 OR 5 & JLE OPERATES
EVEN MARKER USAGES	JSE OPERATES	JSQO,2 OR 4 & JLO OPERATES

ISSUE
5

SFD-10-01-E708

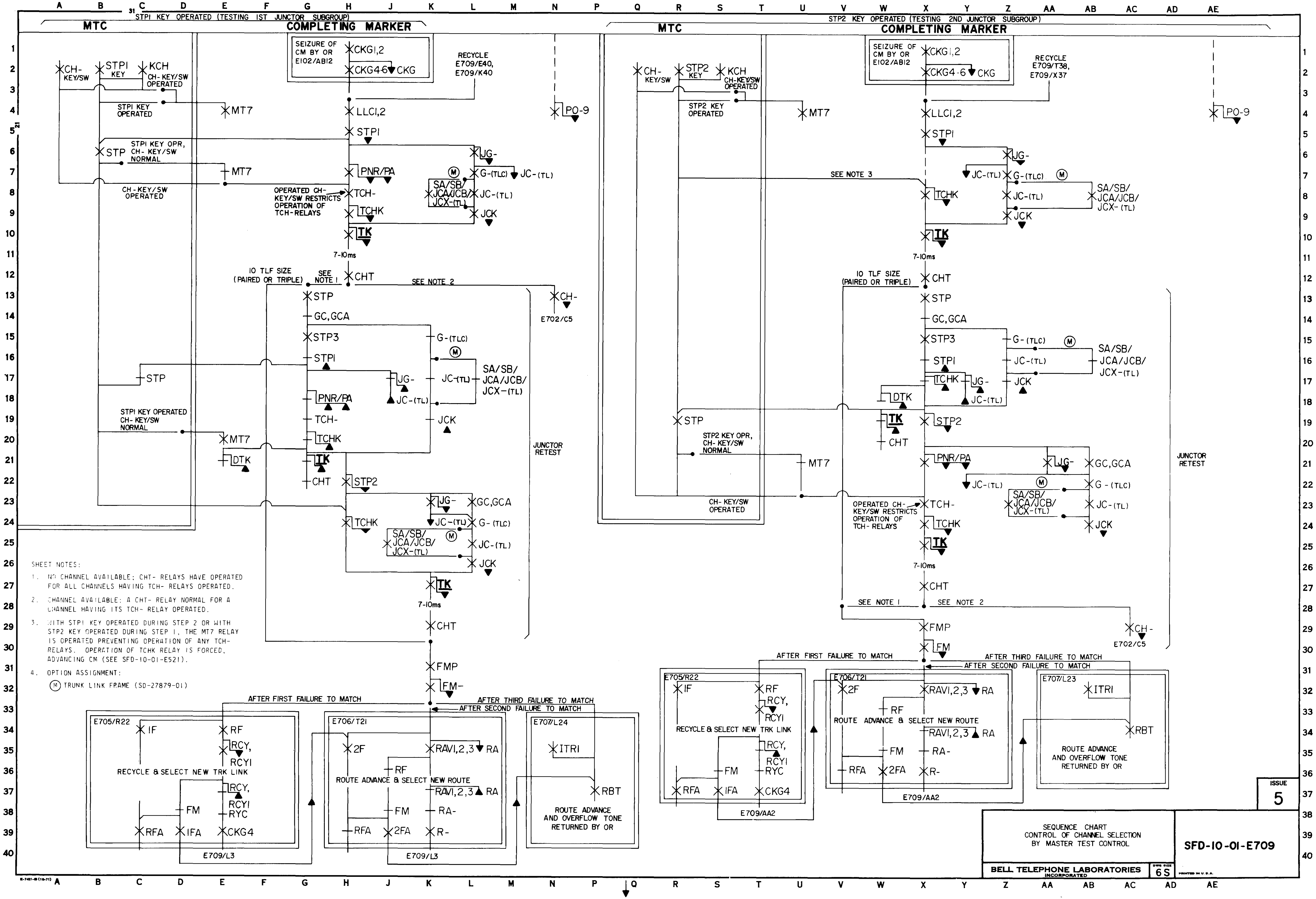
SEQUENCE CHART
JUNCTOR SEQUENCE
CONTROL

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7421-B (10-71)

SFD-10-01-E708


MTC
STP1 KEY OPERATED (TESTING 1ST JUNCTOR SUBGROUP)
COMPLETING MARKER
MTC
STP2 KEY OPERATED (TESTING 2ND JUNCTOR SUBGROUP)
COMPLETING MARKER
SEIZURE OF CM BY OR E102/AB12
CKG1,2
CKG4-6
CKG
RECYCLE E709/E40, E709/K40
RECYCLE E709/T38, E709/X37
CH-KEY/SW
STP1 KEY
KCH
CH-KEY/SW OPERATED
STP1 KEY OPERATED
MT7
LLC1,2
STP1
PO-9
STP
STP1 KEY OPR, CH-KEY/SW NORMAL
JG-
PNR/PA
G-(TLC)
JC-(TL)
SA/SB/JCA/JCB/JCX-(TL)
OPERATED CH-KEY/SW RESTRICTS OPERATION OF TCH-RELAYS
TCH-
TCHK
JCK
TK
7-10ms
10 TLF SIZE (PAIRED OR TRIPLE)
SEE NOTE 1
CHT
SEE NOTE 2
CH-
E702/C5
GC,GCA
STP3
JUNCTOR RETEST
STP1 KEY OPERATED CH-KEY/SW NORMAL
DTK
STP2
FMP
FM-
AFTER FIRST FAILURE TO MATCH
AFTER SECOND FAILURE TO MATCH
AFTER THIRD FAILURE TO MATCH
E705/R22
IF
RF
RCY,
RCY1
RECYCLE & SELECT NEW TRK LINK
FM
RYC
RFA
IFA
CKG4
E709/L3
E706/T21
2F
RAV1,2,3
RA
ROUTE ADVANCE & SELECT NEW ROUTE
RA-
2FA
R-
E707/L24
ITR1
RBT
ROUTE ADVANCE AND OVERFLOW TONE RETURNED BY OR
STP2 KEY
STP2 KEY OPERATED
SEE NOTE 3
STP2 KEY OPR, CH-KEY/SW NORMAL
CH-KEY/SW OPERATED
E709/AA2
E707/L23
ROUTE ADVANCE AND OVERFLOW TONE RETURNED BY OR
A B C D E F G H J K L M N P Q R S T U V W X Y Z AA AB AC AD AE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

SHEET NOTES:

1. NO CHANNEL AVAILABLE; CHT- RELAYS HAVE OPERATED FOR ALL CHANNELS HAVING TCH- RELAYS OPERATED.
2. CHANNEL AVAILABLE; A CHT- RELAY NORMAL FOR A CHANNEL HAVING ITS TCH- RELAY OPERATED.
3. WITH STP1 KEY OPERATED DURING STEP 2 OR WITH STP2 KEY OPERATED DURING STEP 1, THE MT7 RELAY IS OPERATED PREVENTING OPERATION OF ANY TCH- RELAYS. OPERATION OF TCHK RELAY IS FORCED, ADVANCING CM (SEE SFD-10-01-E521).
4. OPTION ASSIGNMENT:
   Ⓜ TRUNK LINK FRAME (SD-27879-01)

ISSUE
5

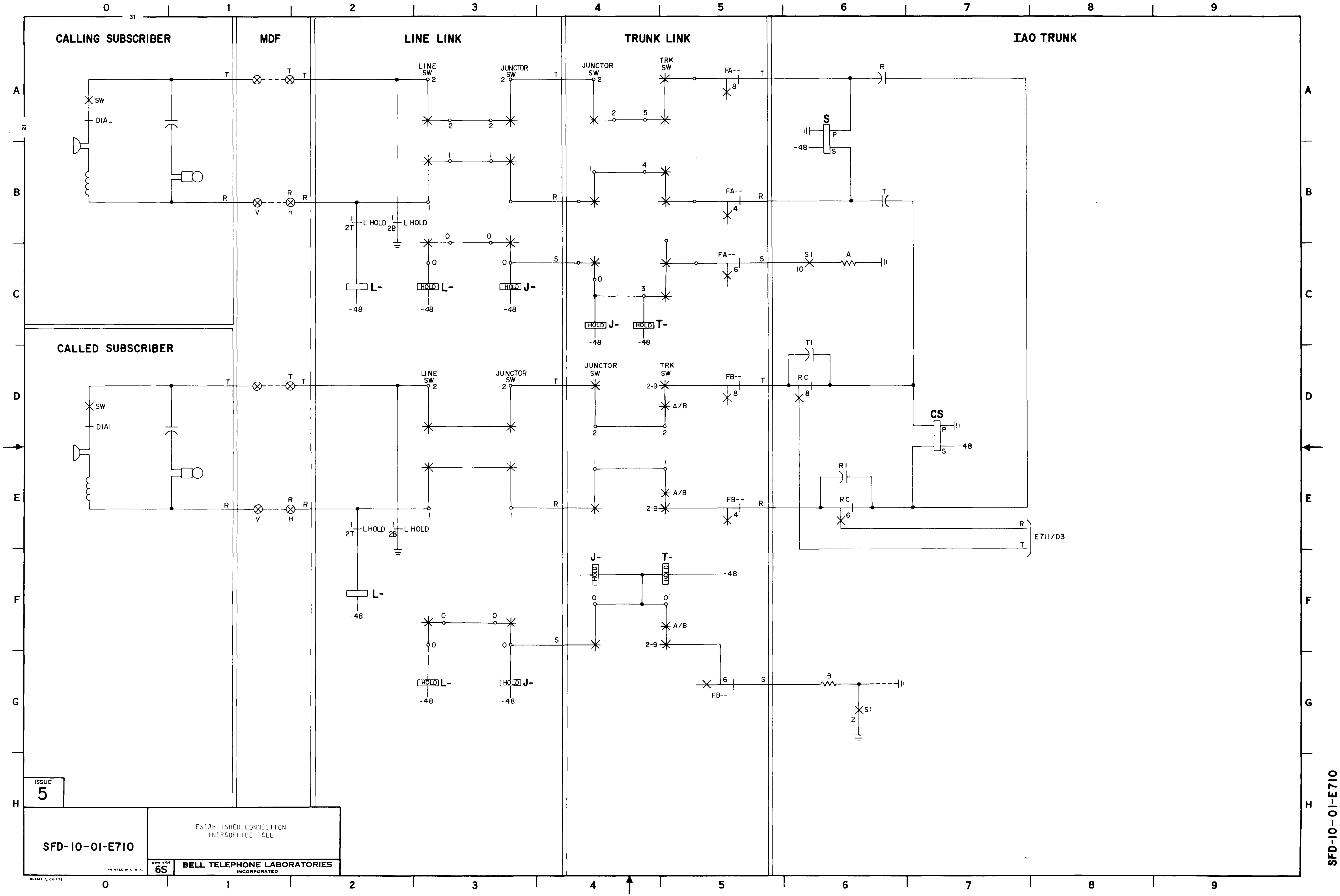
SEQUENCE CHART
CONTROL OF CHANNEL SELECTION
BY MASTER TEST CONTROL

SFD-10-01-E709

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SFD-10-01-E709



ISSUE
5

SFD-10-01-E710

ESTABLISHED CONNECTION
INTRAOFFICE CALL

DWG SIZE 6S

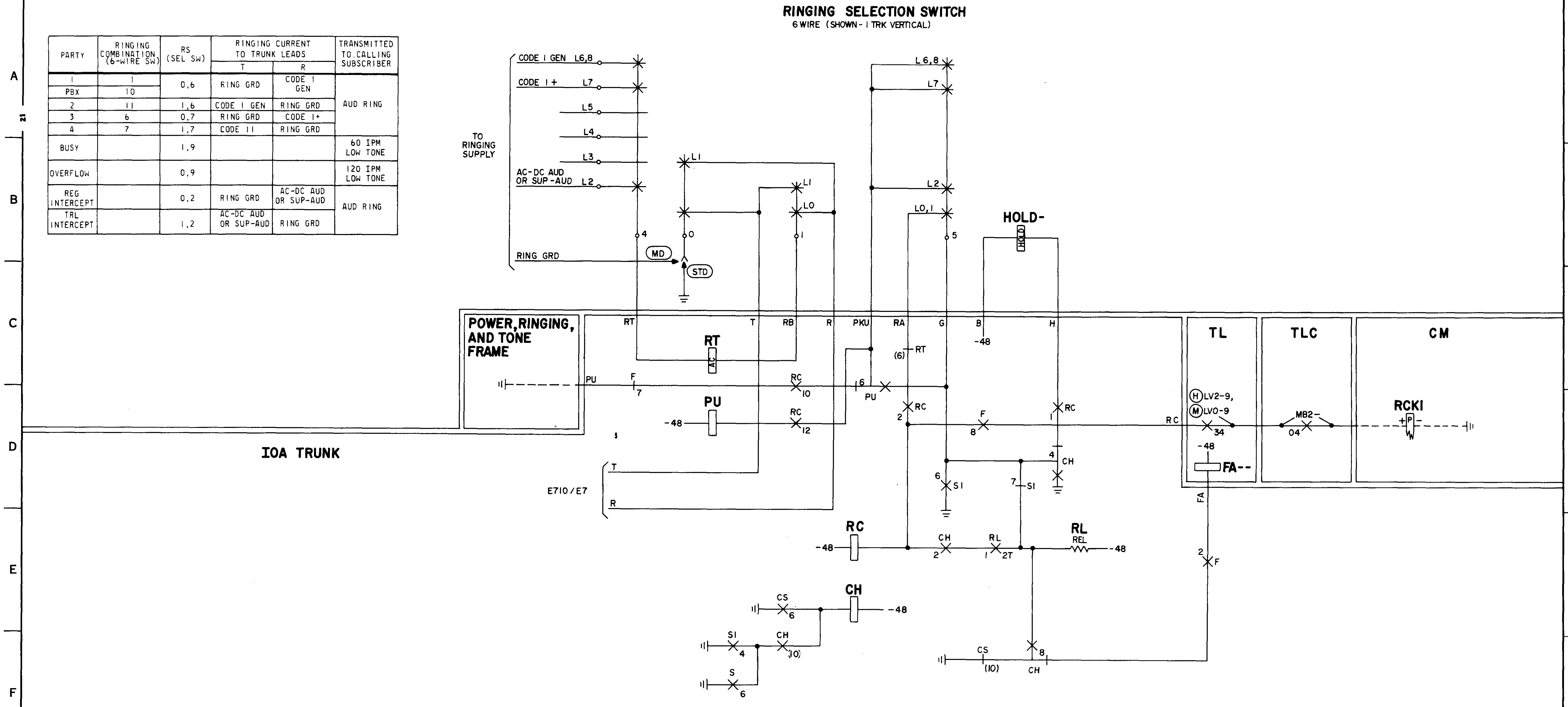
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

E-7421-L (4-73)

SFD-10-01-E710

PARTY	RINGING COMBINATION (6-WIRE SW)	RS (SEL SW)	RINGING CURRENT TO TRUNK LEADS		TRANSMITTED TO CALLING SUBSCRIBER
			T	R	
1	1	0,6	RING GRD	CODE 1 GEN	AUD RING
PBX	10				
2	11	1,6	CODE 1 GEN	RING GRD	
3	6	0,7	RING GRD	CODE 1+	
4	7	1,7	CODE 11	RING GRD	
BUSY		1,9			60 IPM LOW TONE
OVERFLOW		0,9			120 IPM LOW TONE
REG INTERCEPT		0,2	RING GRD	AC-DC AUD OR SUP-AUD	AUD RING
TRL INTERCEPT		1,2	AC-DC AUD OR SUP-AUD	RING GRD	



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓗ TRUNK LINK FRAME; SD-26032-01

Ⓜ TRUNK LINK FRAME; SD-27879-01

ISSUE
5

RINGING SWITCH CONNECTION
INTRAOFFICE CALL

SFD-10-01-E711

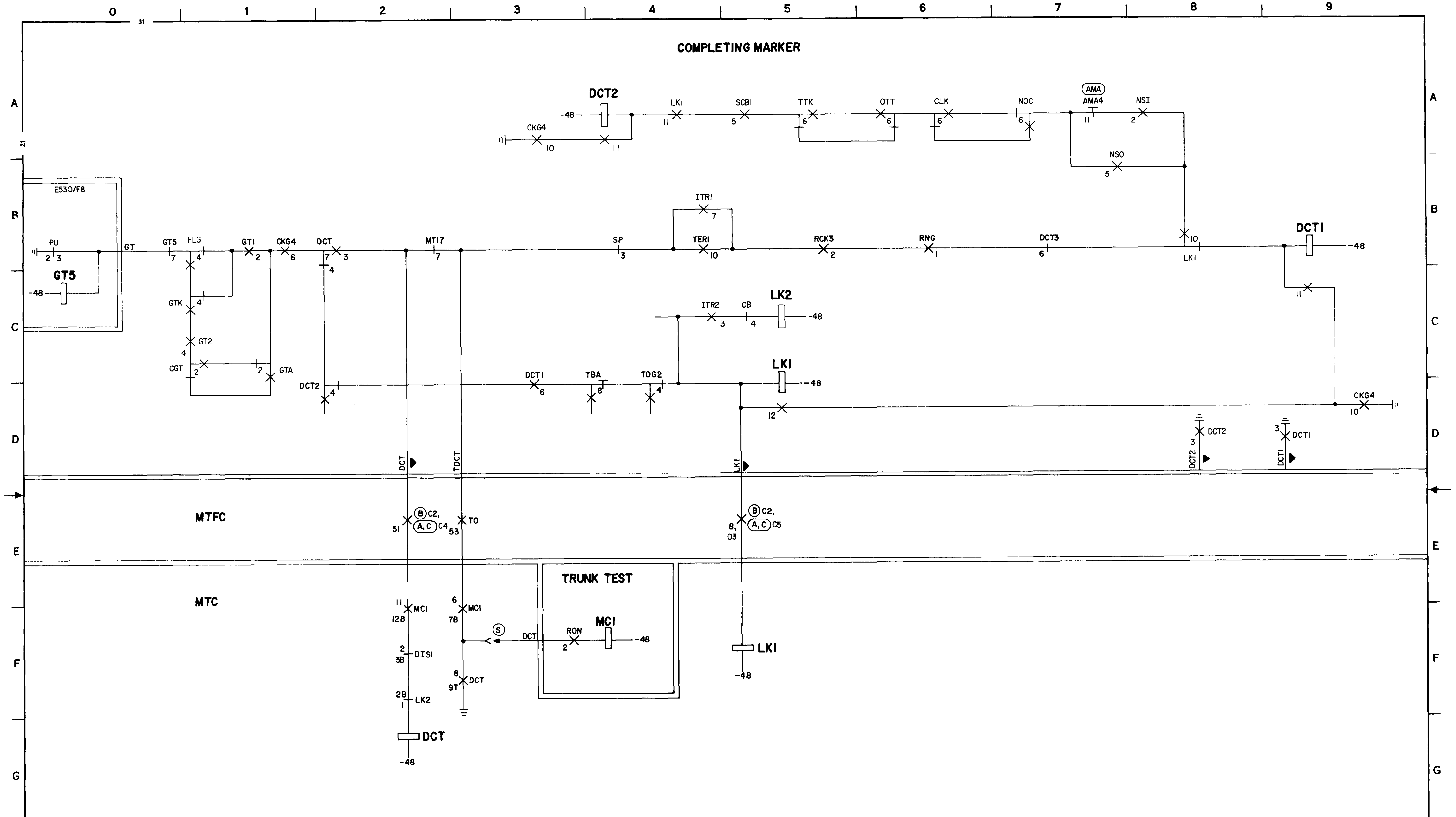
BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PRINTED IN U.S.A.

SFD-10-01-E711

COMPLETING MARKER



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

Ⓢ AUTOMATIC RECYCLE OF TRUNK TEST

ISSUE
5

SFD-10-01-E712

COMPLETING MARKER
DOUBLE CONNECTION
AND LINKAGE CHECK

DWG SIZE 6S

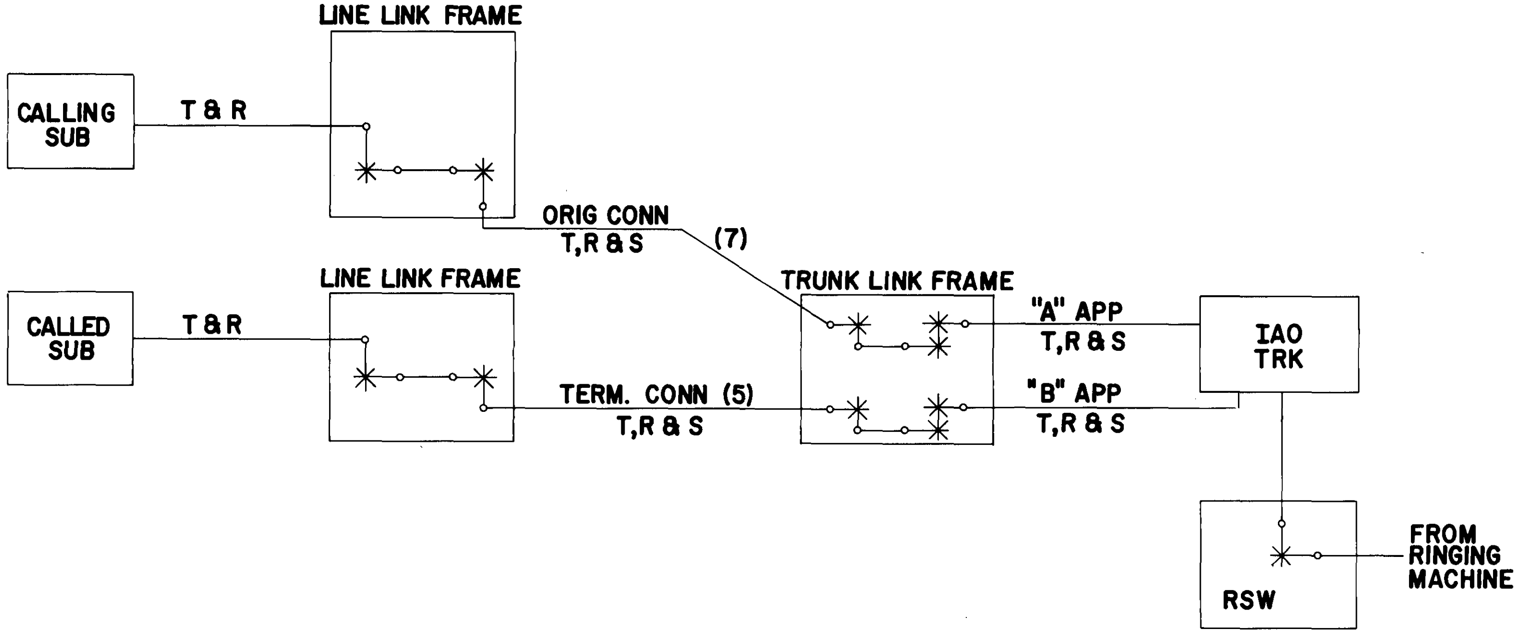
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

CBL-266(10-75)

SFD-10-01-E712

ESTABLISHING INTRAOFFICE TRUNK CONNECTION



INDEX

PAGE NO.	TITLE
E801	PART E8-MARKER RELEASE
E802	SEQUENCE CHART COMPLETING MARKER RELEASE
E803	SEQUENCE CHART COMPLETING MARKER RELEASE
E804	SEQUENCE CHART MARKER ACTION FROM FAILURES (INTRAOFFICE)
E805	SEQUENCE CHART RINGING AND SUBSCRIBER DISCONNECT
E806	COMPLETING MARKER RELEASE
E807	COMPLETING MARKER TROUBLE RECORD CONTROL

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE
5

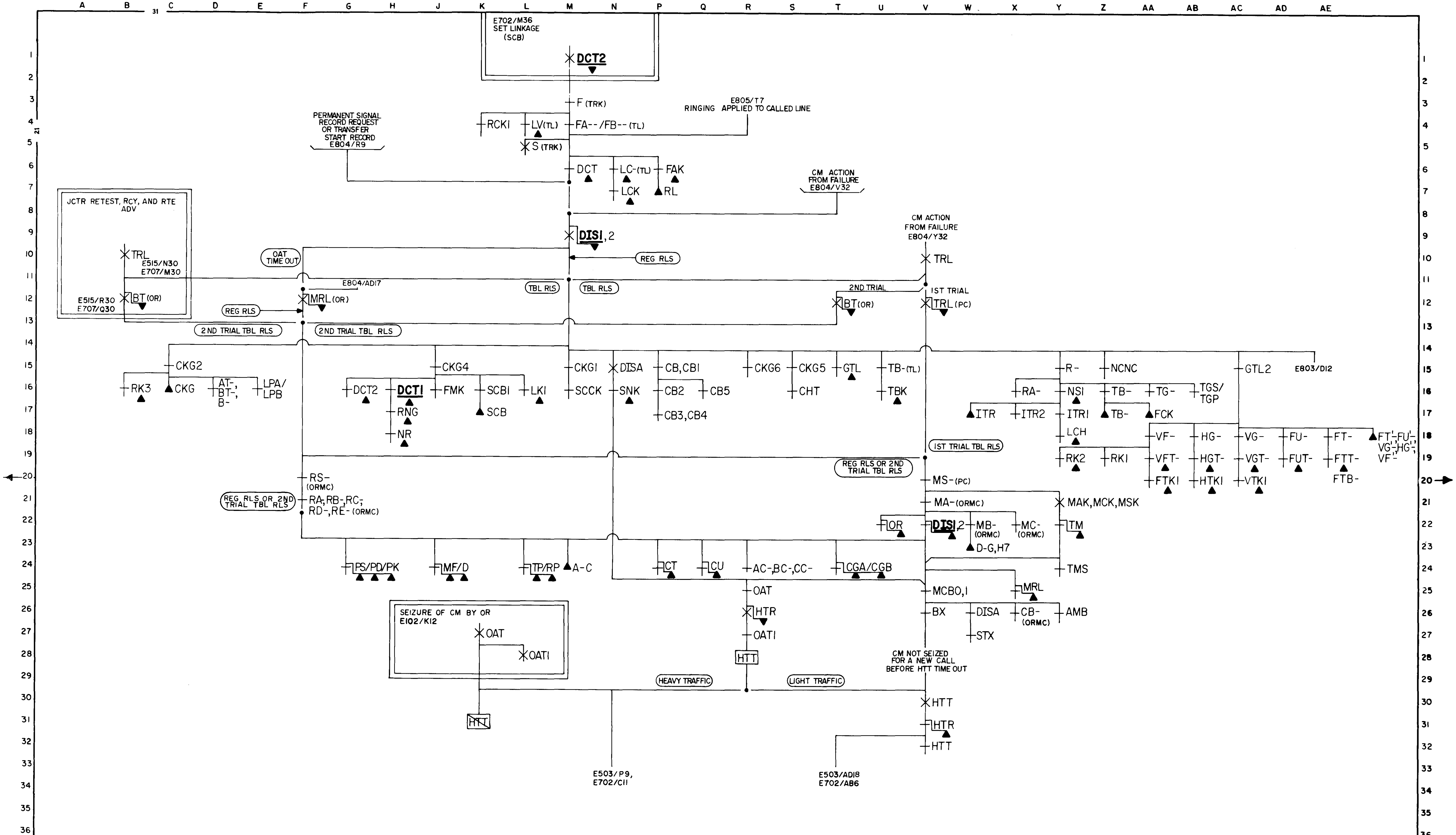
PART E8
MARKER RELEASE

SFD-10-01-E801

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.



ISSUE
5

SFD-10-01-E802

SEQUENCE CHART
COMPLETING MARKER RELEASE

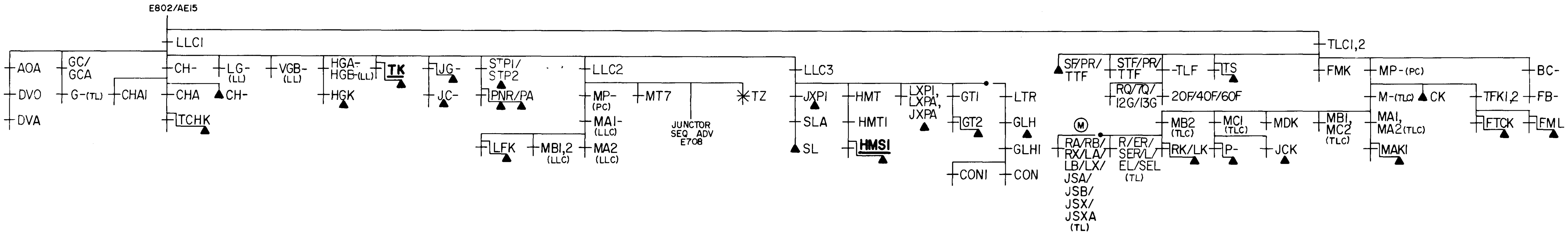
PRINTED IN U.S.A.

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

CBL-267(10-75)

SFD-10-01-E802



SHEET NOTES:

1. OPTION ASSIGNMENT:

Ⓜ TRUNK LINK FRAME (SD-27879-01)

ISSUE
5

SEQUENCE CHART
COMPLETING MARKER RELEASE

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

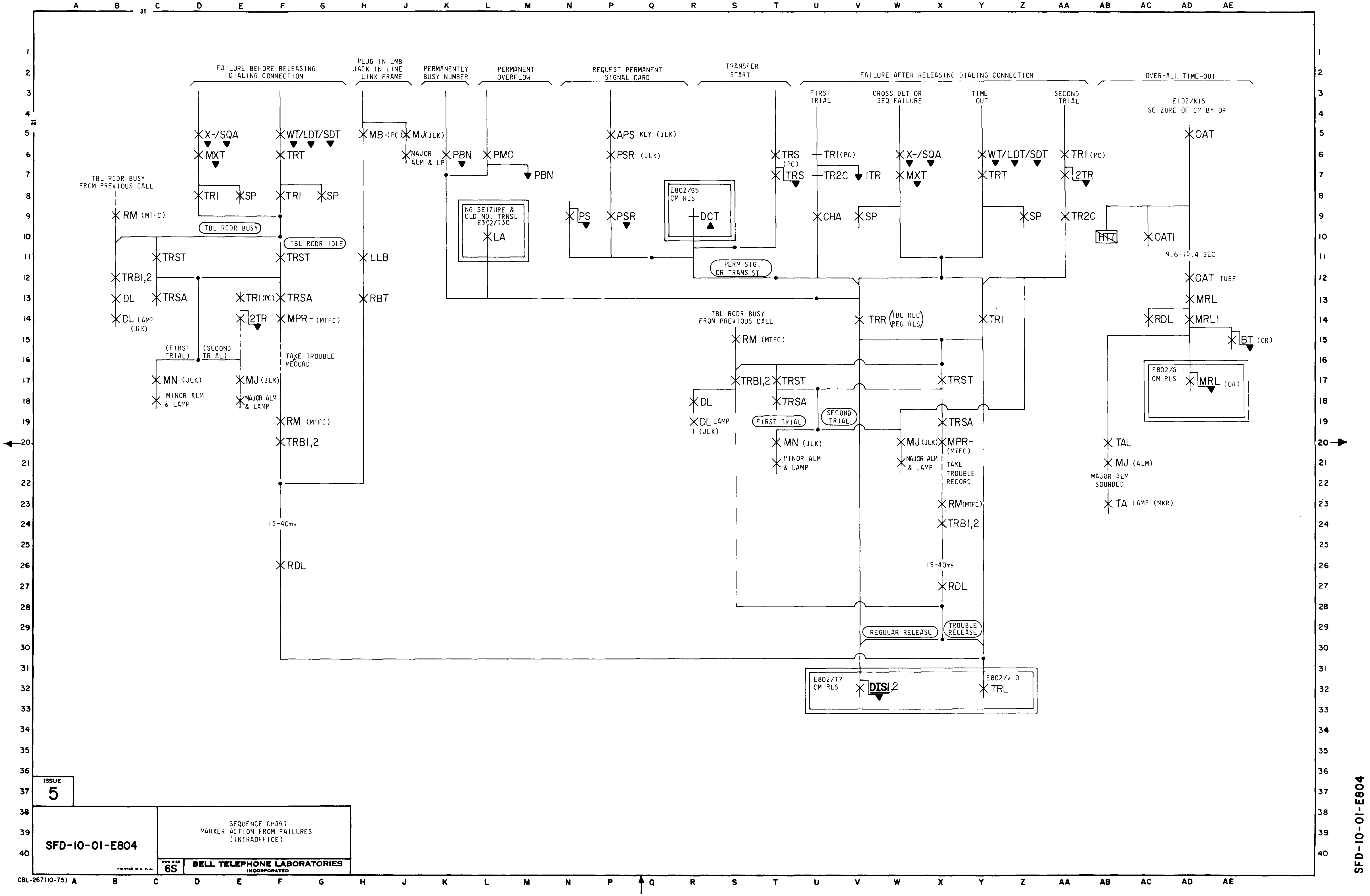
PRINTED IN U.S.A.

SFD-10-01-E803

SFD-10-01-E803

BRUNING 44-131 24092

E-7431-B (10-71)



ISSUE
5

SFD-10-01-E804

SEQUENCE CHART
MARKER ACTION FROM FAILURES
(INTRAOFFICE)

PRINTED IN U.S.A.

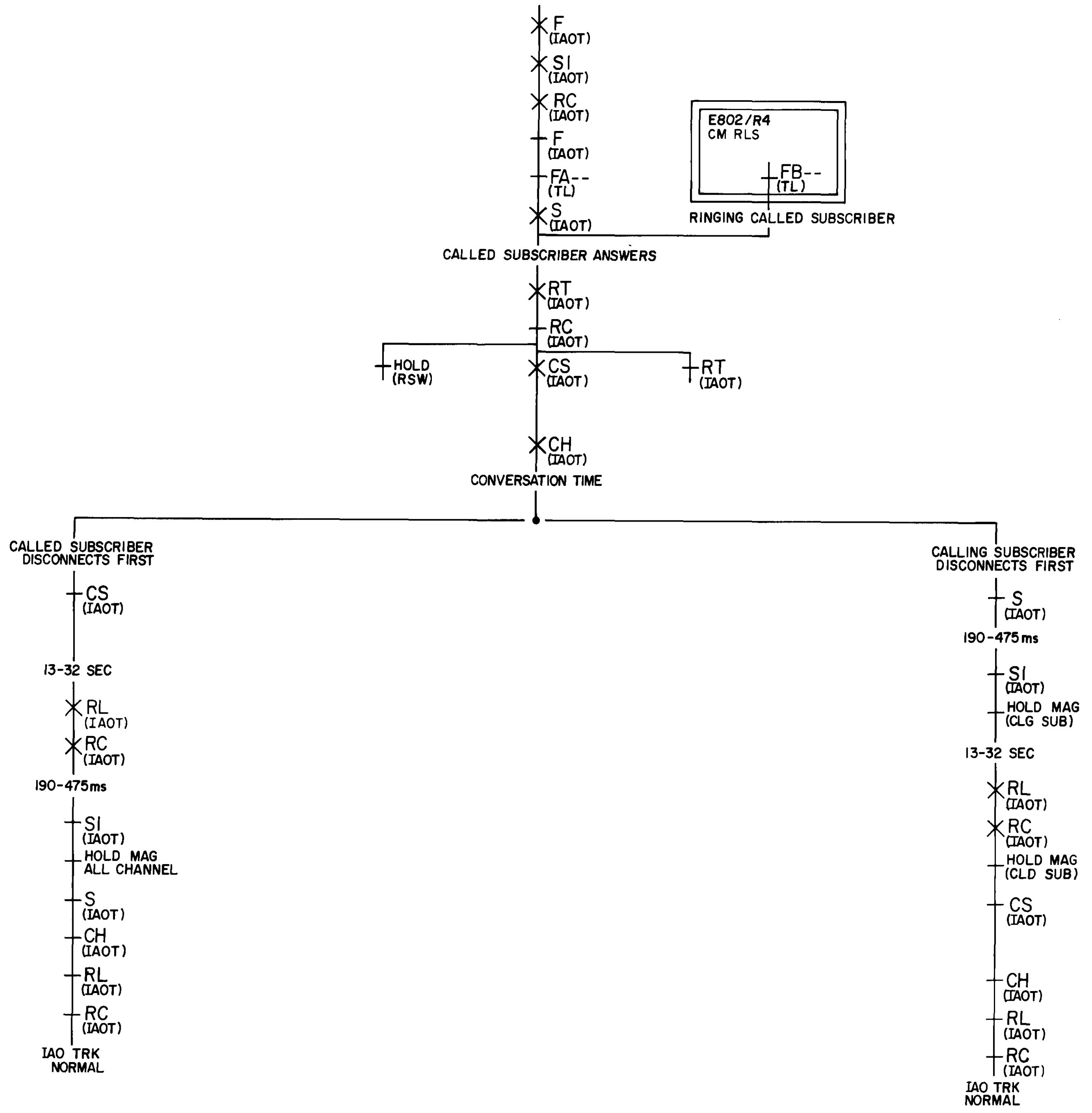
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

CBL-267(10-75)

SFD-10-01-E804

RINGING AND SUBSCRIBER DISCONNECT



ISSUE 5

SEQUENCE CHART
RINGING AND SUBSCRIBER
DISCONNECT

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

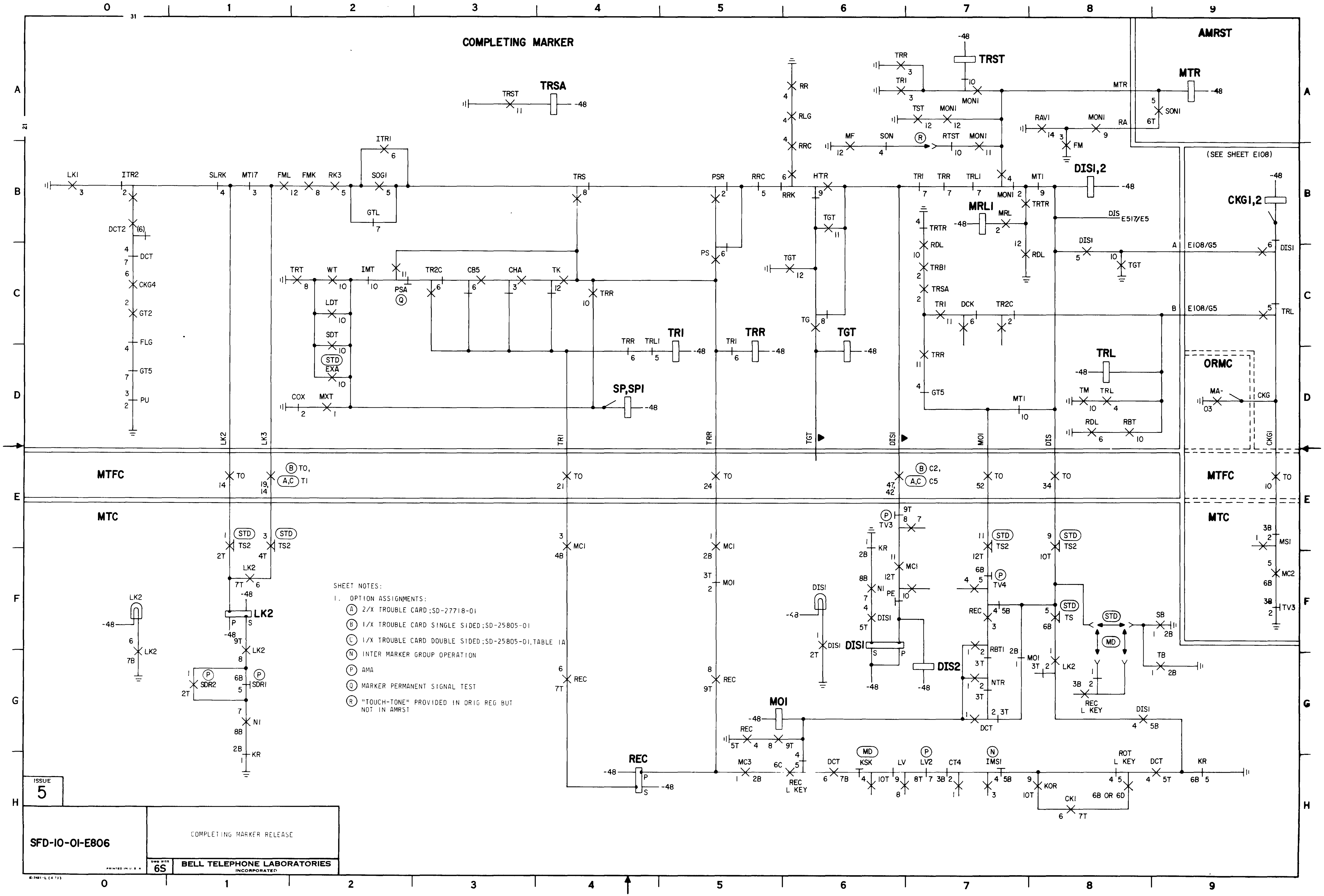
SFD-10-01-E805

SFD-10-01-E805

BRUNING 44-131 24092

E-7421-B (10-71)

COMPLETING MARKER



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD;SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED;SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED;SD-25805-01,TABLE 1A
   - Ⓝ INTER MARKER GROUP OPERATION
   - Ⓟ AMA
   - Ⓠ MARKER PERMANENT SIGNAL TEST
   - Ⓡ "TOUCH-TONE" PROVIDED IN ORIG REG BUT NOT IN AMRST

ISSUE
5

SFD-10-01-E806

COMPLETING MARKER RELEASE

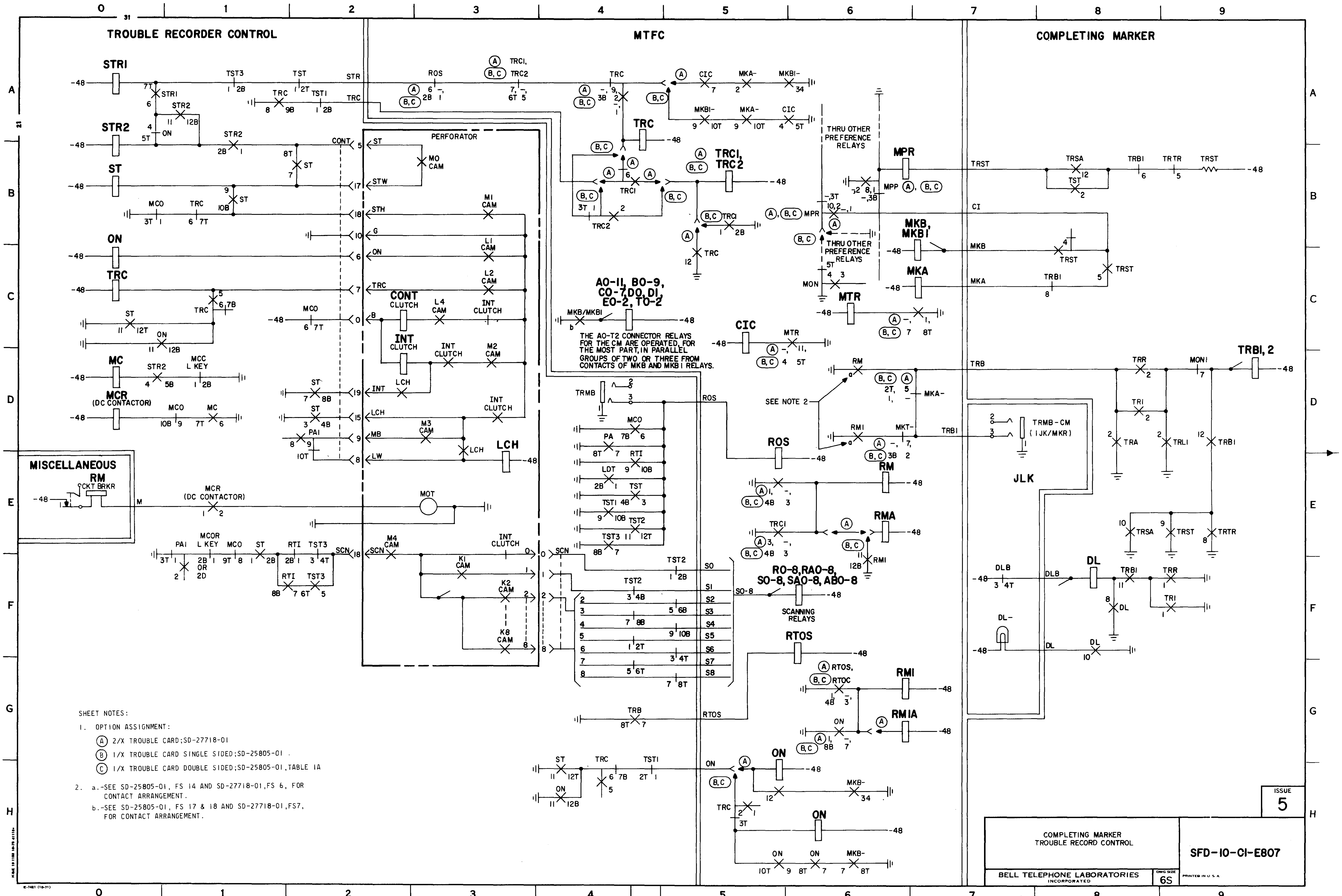
DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7421-L (4-73)

SFD-10-01-E806



SHEET NOTES:

1. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
2. a.-SEE SD-25805-01, FS 14 AND SD-27718-01, FS 6, FOR CONTACT ARRANGEMENT.
   b.-SEE SD-25805-01, FS 17 & 18 AND SD-27718-01, FS7, FOR CONTACT ARRANGEMENT.

ISSUE 5

COMPLETING MARKER
TROUBLE RECORD CONTROL

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-CI-E807

ESTABLISHING INTRAOFFICE TRUNK CONNECTION

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E903	NO. 5 CSBR 2/X DOUBLE SIDED TROUBLE RECORD CARD (E5488) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTRAOFFICE CALL
E904	SIMULATION OF INTRAOFFICE CALLS WHICH PRODUCE I/X DOUBLE SIDED TROUBLE RECORD CARDS (4393)
E905	NO. 5 CSBR I/X DOUBLE SIDED TROUBLE RECORD CARD (E4393) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTRAOFFICE CALL
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E908	CORRELATION BETWEEN JUNCTOR GROUP, JUNCTOR STEP, AND JUNCTOR SEQUENCE SELECTION
E909	SIMULATION OF INTRAOFFICE CALLS WHICH PRODUCE AN AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT
E910	ORIGINATING CLASS OF MARKER TEST INTRAOFFICE CALL
E911	ORIGINATING CLASS OF MARKER TEST INTRAOFFICE CALL
E912	INTRAOFFICE CLASS OF TRUNK TEST

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE
5

PART E9
MAINTENANCE-INTRAOFFICE CALL

SFD-10-01-E901

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U.S.A.

DOUBLE SIDED 2/X TROUBLE RECORD CARD (E5488)						KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				ITR	S7,31	ORIG, IAO	TSTA	ORIG	
							TSTB	IAO	
CLASS OF CALL	ORIG			OR	S3,20		CL	OR-DP/MF	
TRANSLATOR CLASS	LT			LT	S3,00		TRNA	LT	
MARKER				MKR CM	S8,30	MT(0-11)			
		TENS		DRT(0,1)	S8,54,A				MTT1
		UNITS		DR(2/5)	S8,44,50-53		MTU	0-9	
CALLED DIGITS A-G (0-9)				A-G(2/5)	S1,00-54,R8,00-04	A-G(0-9)	A-G	0-9	
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/FT-(2/4)	R1,00-03	FT(0-5)	FT	0-5	
		UNITS		FU-(2/5)	R1,04,10-13	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,14,20-24	VG(0-13)	VGU	0-13	VGT1
	HORIZONTAL GROUP			HG-(2/5)	R1,30-34	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,40-44	VF(0-4)	VF	0-4	
CLASS OF SERVICE	30,60,OR 100 CLASSES	TENS		CT-(2/5)	SA1,B,00-03	CST(0-9)	CST	0-9	
		UNITS		CU-(2/5)	SA1,4,10-13	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	SA2,24				
		30-59		CGB	SA2,30	CGB			CGB
RATE TREATMENT		TENS 0		CGA	SA2,24	CSGA			CSGA
		TENS 1		CGB	SA2,30	CSGB			CSGB
		UNITS		CRU-(2/5)	SA1,14,20-23	CRU(0-9)	CRU	0-9	
TRUNK LINK	FRAME	TENS		FS/T-(1/3)	SA0,21-23	FG(0-2)			FG(0-2)
		UNITS		FS/U-(2/5)	SA0,24,30-33	FS(0-9)	FS	0-9	
			2			FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS/T-(0,1)	SA0,34,40	TS(10-19)			TST1
		UNITS		TS/U-(2/5)	SA0,41-44,50	TS(0-9)	TSU	0-9	
			2			TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA	R6,13	GPA			GPA
	GROUP B			GPB	R6,14	GPB			GPB
CHANNEL				CH-(2/5)	RA7,24,30-33	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	RA8,52,53	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	RA7,44,50-33	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			4	RA,GS(1-5)	S6,21,R6,0-4	RA(0-3)	RAU	0-9	RAT1
OBSERVED CALL				OBS	R6,52	OBS			OBS
RINGING COMBINATION				RCT/T-(0,1)	RA4,43,44	RC(1-10), OTRC	RCU	0-9	RCT1
				RCT/U-(2/5)	RA4,50-54				

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTRAOFFICE TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON E908 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.

ISSUE
5

SFD-10-01-E902

SIMULATION OF INTRAOFFICE
CALLS WHICH PRODUCE 2/X DOUBLE SIDED
TROUBLE RECORD CARDS (E5488)

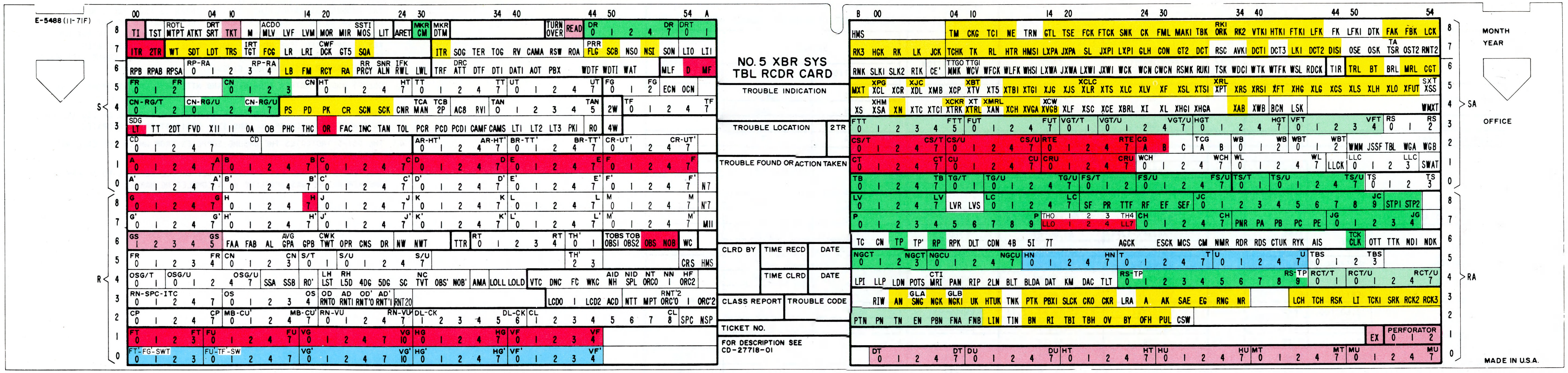
PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-71)

INTRAOFFICE CALL
2/X DOUBLE SIDED TROUBLE CARD



▨ MISCELLANEOUS

🟥 INPUT TO MARKER

🟩 CIRCUITS OR PATHS USED

🟦 OUTPUT FROM MARKER TO NUMBER GROUP OR ORIGINATING REGISTER

🟨 PROGRESS AND TROUBLE INDICATIONS

▨ OUTPUT FROM NUMBER GROUP TO MARKER

SFD-10-01-E903
7 SHEETS, SHEET 1

ISSUE 5

NO 5 CSBR 1/X DOUBLE SIDED TROUBLE RECORD CARD (E5468) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTRAOFFICE CALL

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-E903

E-7481 (10-71)

DOUBLE SIDED I/X TROUBLE RECORD CARD (E4393)						KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				ITR	S7,31	ORIG, IAO	TSTA	ORIG	
							TSTB	IAO	
CLASS OF CALL		ORIG		OR	S3,20		CL	OR-DP/MF	
TRANSLATOR CLASS		LT		LT	S3,00		TRNA	LT	
MARKER			5	MKR	S8,30	MT(0-11)			
		TENS 1		DRT1	S8,54				MTT1
		TENS 0		DRTO	S7,54				
		UNITS		DR(0-9)	S8,34,40-44,50-53		MTU	0-9	
CALLED DIGITS A-G (0-9)				A-G(2/5)	S1,00-54,R8,00-04	A-G(0-9)	A-G	0-9	
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/FT-(2/4)	R1,00-03	FT(0-5)	FT	0-5	
		UNITS		FU-(2/5)	R1,04-13	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,14-23	VG(0-13)	VGU	0-9	VGT1
	HORIZONTAL GROUP			HG-(2/5)	R1,30-34	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,40-44	VF(0-4)	VF	0-4	
CLASS OF SERVICE	30,60,100 CLASSES	TENS		CT-(2/5)	R1,50-52,R2,52,53	CST(0-9)	CST	0-9	
		UNITS		CU-(2/5)	R0,50-54	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	R1,53				
		30-59		CGB	R1,54	CGB			CGB
RATE TREATMENT		TENS 0		CGA	R1,53	CSGA			CSGA
		TENS 1		CGB	R1,54	CSGB			CSGB
		UNITS		CRU-(2/5)	R8,49-54,R7,54	CRU(0-9)	CRU	0-9	
TRUNK LINK	FRAME	TENS		FS(0-29)	SA0,00-54	FG(0-2)			FG(0-2)
		UNITS				FS(0-9)	FS	0-9	
			2			FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS(0-19)	RA8,00-34	TS(10-19)			TST1
		UNITS				TS(0-9)	TSU	0-9	
			2			TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA	R6,13	GPA			GPA
	GROUP B			GPB	R6,14	GPB			GPB
CHANNEL				CH(0-9)	RA5,10-24	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	RA5,53,54	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	RA6,20-24	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			4	RA,GS(1-5)	S6,21,R6,00-04	RA(0-3)	RAU	0-9	RAT1
OBSERVED CALL				OBS	S2,21	OBS			OBS
RINGING COMBINATION				RCT(1-15)	SA3,30-54	RC(1-10),OTRC	RCU	0-9	RCT1

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTRAOFFICE TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON E908 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.
5. OBSERVE DRTO/1 AND DRO-9 AND CONSULT OFFICE RECORDS TO DETERMINE WHETHER RECORD WAS PRODUCED BY A COMPLETING MARKER.

ISSUE
5

SFD-10-01-E904

SIMULATION OF INTRAOFFICE
CALLS WHICH PRODUCE I/X DOUBLE SIDED
TROUBLE RECORD CARDS (E4393)

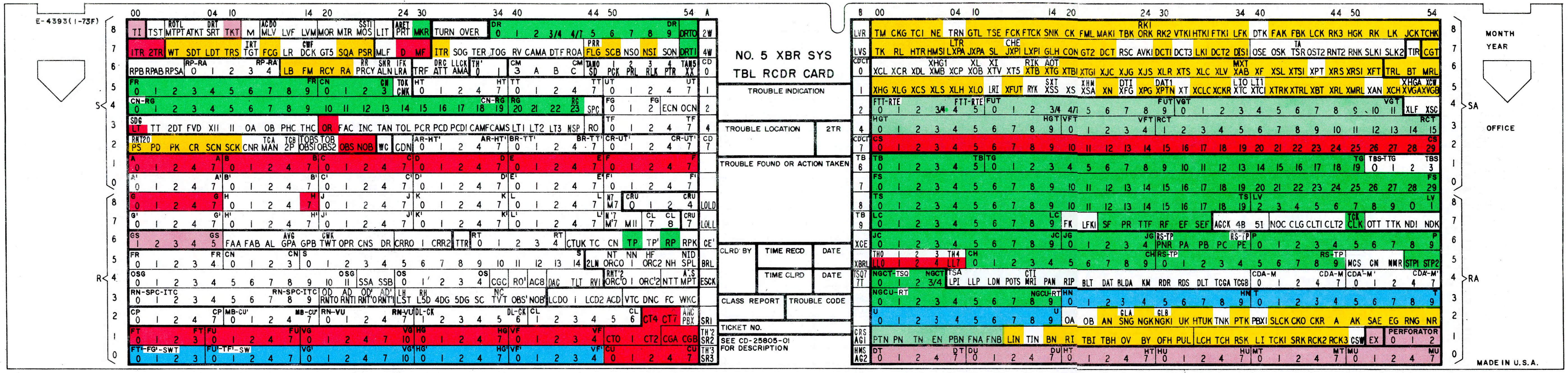
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7481-L (4-73)

INTRAOFFICE CALL
1/X DOUBLE SIDED TROUBLE CARD



🟪	MISCELLANEOUS
🟥	INPUT TO MARKER
🟩	CIRCUITS OR PATHS USED
🟦	OUTPUT FROM MARKER TO NUMBER GROUP OR ORIGINATING REGISTER
🟨	PROGRESS AND TROUBLE INDICATIONS
▨	OUTPUT FROM NUMBER GROUP TO MARKER

SFD-10-01-E905
7 SHEETS, SHEET 1

ISSUE
5

NO 5 CSBR 1/X DOUBLE SIDED TROUBLE RECORD CARD (E4393) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTRAOFFICE CALL

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-E905

SINGLE SIDED 1/X TROUBLE RECORD CARD (E3638)						KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				ITR	S7,5	ORIG, IAO	TSTA	ORIG	
							TSTB	IAO	
CLASS OF CALL		ORIG		OR	S4,9		CL	OR-DP/MF	
TRANSLATOR CLASS		LT		LT	S4,0		TRNA	LT	
MARKER			5	MKR	S8,15	MT(0-11)			
		TENS		DRT-	S7,19,20				MTTI
		UNITS		DR-	S8,19-28		MTU	0-9	
CALLED DIGITS A-G (0-9)				A-G(2/5)	S0,0-29,R7,0-4	A-G(0-9)	A-G	0-9	
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/FT-(2/4)	R1,0-3	FT(0-3)	FT	0-3	
		UNITS		FU-(2/5)	R1,4-8	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,9-14	VG(0-13)	VGU	0-9	VGTI
	HORIZONTAL GROUP			HG-(2/5)	R1,15-19	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,20-24	VF(0-4)	VF	0-4	
CLASS OF SERVICE	30 OR 60 CLASSES	TENS		CT-(1/3)	R1,25-27	CST(0-9)	CST	0-9	
		UNITS		CU-(2/5)	R0,25-29	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	S3,42				
		30-59		CGB	S3,43	CGB			CGB
TRUNK LINK	FRAME	TENS		FS(0-19)	S1,30-49	FG(0,1)			FG(0,1)
		UNITS				FS(0-9)	FS	0-9	
			2			FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS (0-19)	S0,30-39	TS(10-19)			TSTI
		UNITS				TS(0-9)	TSU	0-9	
			2			TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA	R5,38	GPA			GPA
	GROUP B			GPB	R5,39	GPB			GPB
CHANNEL				CH(0-9)	R7,50-59	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	R5,30,31	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	R6,40-44	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			4	RA,GS(1-5)	S8,54,R5,32-36	RA(0-3)	RAU	0-9	RATI
OBSERVED CALL				OBS	S3,8	OBS			OBS
RINGING COMBINATION				RCT(1-15)	S4,45-59	RC(1-10),OTRC	RCU	0-9	RCTI

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTRAOFFICE TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR SEQUENCE TABLE ON E908 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.
5. OBSERVE DRT0/1 AND DR0-9 AND CONSULT OFFICE RECORDS TO DETERMINE WHETHER RECORD WAS PRODUCED BY A COMPLETING MARKER.

ISSUE
5

SFD-10-01-E906

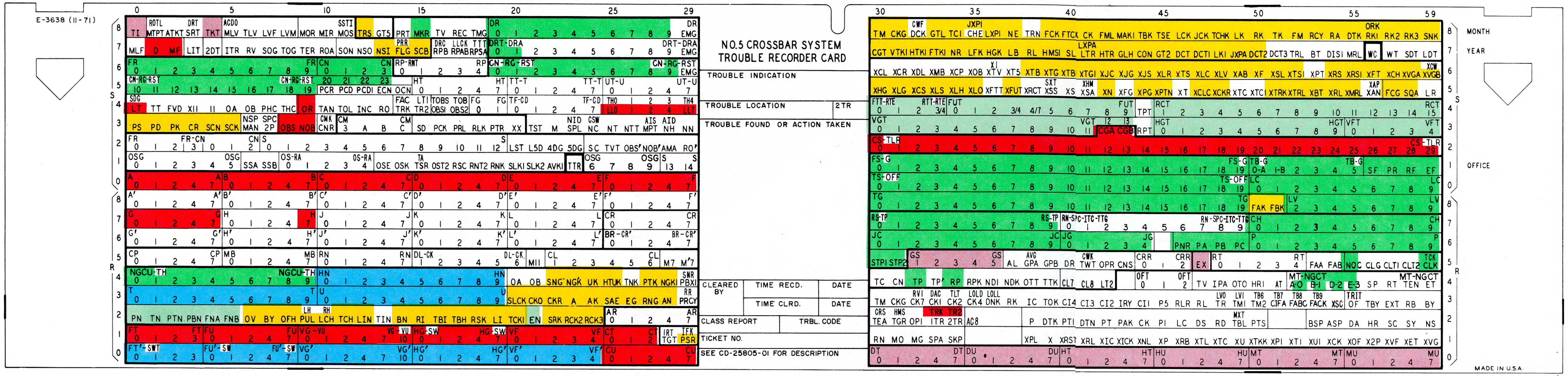
SIMULATION OF INTRAOFFICE
CALLS WHICH PRODUCE 1/X
SINGLE SIDED TROUBLE RECORD
CARDS (E3638)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

INTRAOFFICE CALL
1/X SINGLE SIDED TROUBLE CARD



🟪	MISCELLANEOUS
🟥	INPUT TO MARKER
🟩	CIRCUITS OR PATHS USED
🟦	OUTPUT FROM MARKER TO NUMBER GROUP OR ORIGINATING REGISTER
🟨	PROGRESS AND TROUBLE INDICATIONS
🟩	OUTPUT FROM NUMBER GROUP TO MARKER

NO 5 CSBR 1/X SINGLE SIDED TROUBLE RECORD CARD (E3638) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTRAOFFICE CALL

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

ISSUE 5

SFD-10-01-E907

SFD-10-01-E907
7 SHEETS, SHEET 1

E-7421 (10-71)

JUNCTOR SUBGROUP SELECTED (JG- DESIGNATION PERFORATED)

NUMBER OF TRUNK LINK FRAMES			JUNCTOR STEP POSITION (STP1 OR STP2)	JUNCTOR SEQUENCE (JSQ-)					
SINGLE	PAIRED	TRIPLED		0	1	2	3	4	5
2	4	6	1 2	JG0 JG3	JG1 JG4	JG2 JG3	JG0 JG4	JG1 JG3	JG2 JG4
2-3	4-6	6-9	1 2	JG0 JG1	JG1 JG2	JG2 JG0	JG0 JG1	JG1 JG2	JG2 JG0
3	6	9	1 2	JG0 JG3	JG1 JG3	JG2 JG3	JG0 JG3	JG1 JG3	JG2 JG3
4	8	12	1 2	JG0 JG2	JG1 JG2	JG0 JG2	JG1 JG2	JG0 JG2	JG1 JG2
5	10	15	1 2	JG0 JG1	JG1 JG0	JG0 JG1	JG1 JG0	JG0 JG1	JG1 JG0
6	12	18	1 2	JG0 JG1	JG0 ** JG1/2	* JG0/1 ** JG0/1	JG0 ** JG1/2	JG0 JG1	** JG0/1 ** JG0/2
7	14	21	1 2	JG0 JG1	JG0 ** JG1/2	JG0 JG1	JG0 ** JG1/2	JG0 JG1	** JG0/1 ** JG0/2
8	16	24	1 2	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1
9	18	27	1 2	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1
10	20	30	1	JG0	JG0	JG0	JG0	JG0	JG0

* JG0 DESIGNATION PERFORATED IF THREE JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.
JG1 DESIGNATION PERFORATED IF TWO JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.

** LOWER-NUMBERED JG- DESIGNATION PERFORATED IF TWO JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.
HIGHER-NUMBERED JG- DESIGNATION PERFORATED IF THREE JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.

ISSUE
5

SFD-10-01-E908

CORRELATION BETWEEN
JUNCTOR GROUP, JUNCTOR STEP,
AND JUNCTOR SEQUENCE SELECTION

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT					KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	TTY OUTPUT	KEY DESIGNATION	SWITCH		KEY DESIGNATION
						DESIGNATION	POSITION	
TYPE OF CALL				ITR	ORIG/IAO	TSTA	ORIG	
						TSTB	IAO	
CLASS OF CALL		ORIG		OR		CL	OR-DP/MF	
TRANSLATOR CLASS		LT		LT		TRNA	LT	
MARKER		TENS			MT(0-11)			MTT1
		UNITS				MTU	0-9	
CALLED DIGITS A-(0-9)				DIG.XXXX----	A-(0-9)	A-	0-9	.3
LINE LOCATION	FRAME	TENS	1	FT.X	FT(0-5)	FT	0-5	
		UNITS		FU.X	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG.XX	VG(0-13)	VGU	0-9	VGT1
	HORIZONTAL GROUP			HG.X	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF.X	VF(0-4)	VF	0-4	
CLASS OF SERVICE	30,60,OR 100 CLASSES	TENS		CT.X	CST(0-9)	CST	0-9	
		UNITS		CU.X	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA				
		30-59		CGB	CGB			CGB
RATE TREATMENT		TENS 0		CGA	CSGA			CSGA
		TENS 1		CGB	CSGB			CSGB
		UNITS		CRU.X	CRU(0-9)	CRU	0-9	
TRUNK LINK	FRAME	TENS		FS.XX	FG(0-2)			FG(0-2)
		UNITS			FS(0-9)	FS	0-9	
			2		FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS.XX	TS(10-19)			TST1
		UNITS			TS(0-9)	TSU	0-9	
			2		TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA	GPA			GPA
	GROUP B			GPB	GPB			GPB
CHANNEL				CH.X	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG.X	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE				GS.X	RA(0-3)	RAU	0-9	RAT1
OBSERVED CALL				OBS	OBS			OBS
RINGING COMBINATION		TENS		RCT.XX	OTRC			RCT1
		UNITS			RC(1-10)	RCU	0-9	

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTRAOFFICE TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR. SEQUENCE TABLE ON E908 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.

ISSUE
5

SIMULATION OF INTRAOFFICE CALLS
WHICH PRODUCE AN AUTOMATIC TROUBLE
ANALYSIS EXCEPTION REPORT

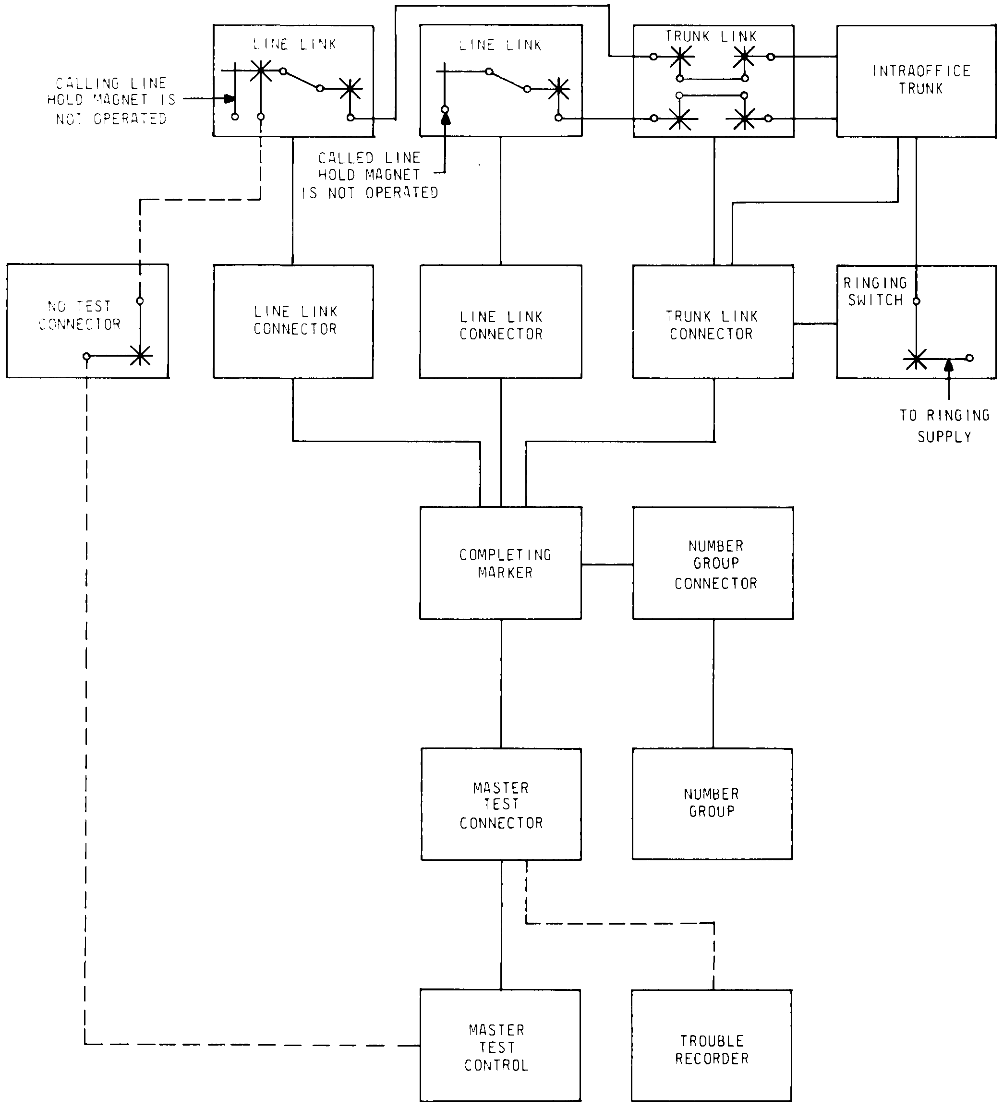
SFD-10-01-E909

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

E-7421 (10-71)



BSP 218-122-511, ISS 2

SD-25800-01 MASTER TEST CONTROL CIRCUIT (MTC)

SHEET NOTES:

1. KEY(S) OR SWITCH(ES) THAT MUST BE OPERATED TO PERFORM THIS CLASS OF TEST.
2. KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD (SEE SFD-E902/E904/E906).
3. KEY(S) OR SWITCH(ES) WHICH MAY BE OPERATED TO CAUSE ADDITIONAL ACTIONS OR TEST VARIATIONS FOR THIS PARTICULAR TEST.
4. ON INTRAOFFICE TEST CALLS WITH KEY REC OPERATED, TWO TROUBLE RECORDER CARDS SHOULD BE RECEIVED. THE FIRST, WITH POSITION FLG PERFORATED, CONTAINS ORIGINATING LINE LOCATION AND CLASS, CALLED NUMBER LOCATION, AND OTHER INFORMATION FOR SETTING UP THE CALL FORWARD LINKAGE OF THE CALL. THE SECOND, WITH POSITION SCB PERFORATED, CONTAINS ORIGINATING LINE LOCATION, CLASS, AND OTHER INFORMATION FOR SETTING UP THE CALL BACK LINKAGE OF THE CALL.

SD-25800-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
1	67	ORIG KEY	ORIGINATING ALLOWS TESTING A MARKER USING AN ORIGINATING CLASS OF CALL.
	74	TSTA SW (ORIG)	
1,2	17,WX	FACD KEY (OPR/N-OPR)	ORIGINATING/FOREIGN AREA CLASS WITH THE FACD KEY NORMAL OR THE CL SWITCH OPERATED TO OR-DP/MF, INDICATES A HOME OFFICE CODE. WITH THE FACD KEY OR CL SWITCH OPERATED TO FAC-DP/MF, INDICATES A FOREIGN AREA CODE.
	11,NQ	CL SW (OR-DP/MF/ FAC-DP/MF/	
	WW	NONE	
1,2	NT,OW	LOC TRNSL (ALL KEYS NORMAL)	TRANSLATOR CLASS OPERATE AS REQUIRED TO PRIME MARKER FOR LOCAL TRANSLATION.
	11,NQ	TRNA SW (LT)	
1,2	19,21	MT (0-11) KEY	MARKER TEST DIRECTS THE MTFC TO CONNECT THIS TEST CIRCUIT (MTC) TO THE MARKER CORRESPONDING TO THE NUMBERED OPERATED.
	52	MT SW (0-11)	
	81	MTU SW (0-9)	
		MTTI KEY	
1,2	4,KX	A-C (0-9) KEY	CALLED DIGITS (A-C) PRIMES THE MARKER WITH THE THREE DIGIT OFFICE CODE (INTRAOFFICE ROUTE).
	4,ZVL	A-C SW (0-9)	
1,2	4,KX	D(0-9) KEY	CALLED DIGITS (D-G) PRIMES THE MARKER WITH THE CALLED DIGITS
	4,KY	E(0-9) KEY	
	4,KZ	F(0-9) KEY	
	4,JA	G(0-9) KEY	
	4,ZVL	D-G SW (0-9)	
1,2	FIG. S	FT (0-3) KEY	FRAME TENS OPERATED TO TRANSMIT THE LINE LINK FRAME TENS DIGIT OF CALLING LINE TO THE MARKER.
	FIG. T	FT (0-5) KEY	
	78	FT SW (0-5)	
1,2	6,KX	FU (0-9) KEY	FRAME UNITS OPERATED TO TRANSMIT THE LINE LINK FRAME UNITS DIGIT OF CALLING LINE TO THE MARKER.
	6,ZWP, ZWQ	FU SW (0-9)	
1,2	6,KX	VG (0-9) KEY	VERTICAL GROUP OPERATED TO TRANSMIT THE VERTICAL GROUP OF THE CALLING LINE TO THE MARKER.
	6,ZF	VG (10-13) KEY	
	6,JF	VGU SW (0-9)	
		VGTI KEY	
1,2	6,KX	HG (0-9) KEY	HORIZONTAL GROUP OPERATED TO TRANSMIT THE HORIZONTAL GROUP OF THE CALLING LINE TO THE MARKER.
	6,JF	HG SW (0-9)	

SD-25800-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
1,2	6,RD, RE	VF (0-4) KEY	VERTICAL FILE OPERATED TO TRANSMIT THE VERTICAL FILE OF THE CALLING LINE TO THE MARKER.
	6,JF	VF SW (0-4)	
1,2	7,XA, XB,ZG	CST (0-2) KEY	CLASS OF SERVICE TENS CONTROLS THE CLASS-OF-SERVICE TENS DIGIT OF THE CALLING LINE TRANSMITTED TO THE MARKER.
	7,XB	CST (0-9) KEY	
	7,JF	CST SW (0-9)	
1,2	7,JH, RY	CSU (0-9) KEY	CLASS OF SERVICE UNITS CONTROLS THE CLASS-OF-SERVICE UNITS DIGIT OF THE CALLING LINE TRANSMITTED TO THE MARKER.
	7,JF	CSU SW (0-9)	
1,2	37, GC,GD	CGB KEY (OPR/N-OPR)	CLASS GROUP B USED WHEN OFFICE HAS A MAXIMUM OF 60 CLASSES OF SERVICE. SELECTS CLASS GROUP A WITH KEY IN NORMAL POSITION.
		NONE	
1,2	7,JI	CRU (0-9) KEY	CUSTOMER RATE TREATMENT UNITS PROVIDES RATE TREATMENT INFORMATION TO MARKER.
	7,JF	CRU SW (0-9)	
		NONE	NO RATE TREATMENT REQUIRED
1,2	7,ED	CSGA/ CSGB KEY	RATE TREATMENT GROUP A AND B CONTROLS THE RATE TREATMENT GROUP INDICATION TO MARKER.
		NONE	NO RATE TREATMENT REQUIRED
1	1	ST/RL KEY	START AND RELEASE OPERATED TO ST INITIATES A TEST CALL. OPERATED TO RL CAUSES TEST CALL AND ALL ASSOCIATED CIRCUITS TO RELEASE.
2	9	FS/ NTFS KEY	FRAME SELECTION/NO TEST FRAME SELECTION PERMITS SELECTION OF A PARTICULAR TRUNK LINK FRAME UNDER CONTROL OF THE FG(0-2) KEYS AND FS(0-9) KEYS OR SWITCH, WITH (FS KEY) OR WITHOUT (NTFS KEY), FIRST TESTING FOR IDLE TRUNKS ON THAT TRUNK LINK FRAME.
2	U	FG (0,1) KEY	TRUNK LINK FRAME GROUP USED IN CONJUNCTION WITH THE FS(0-9) KEYS OR SWITCH WHEN THE FS OR NTFS KEYS ARE OPERATED. INDICATES TENS DIGIT OF TRUNK LINK FRAME NUMBER.
	79	FG (0-2) KEY	
	80	FG (1,2) KEY	FOR FRAME GROUP 0, THE FG KEY SHOULD BE IN THE NORMAL POSITION.
2	U,79	FS (0-9)	TRUNK LINK FRAME UNITS WITH FS KEY OPERATED, MAKES ALL TRUNK LINK FRAMES EXCEPT THAT CORRESPONDING TO THE OPERATED FS(0-9) CN FG(0-2) KEYS LOOK BUSY.
	80	FS SW (0-9)	
2	9	TS/ NTTS KEY	TRUNK SELECTION/NO TEST TRUNK SELECTION MAKES ALL TRUNKS EXCEPT THE ONE CORRESPONDING TO THE OPERATED TS(0-19) KEYS OR SWITCH LOOK BUSY TO THE MARKER AND IF NTTS KEY IS OPERATED, WILL OPERATE THE "TST" RELAY IN THE TLF WHICH REMOVES THE PLUGGED-BUSY CONDITION FROM ALL TRUNKS ON THAT TRUNK LINK FRAME
2	9,KX	TS (0-19) KEY	TRUNK SELECTION MAKES ALL TRUNKS EXCEPT ONE CORRESPONDING TO THE OPERATED TS(0-9) KEY LOOK BUSY TO THE MARKER.
	9,JF	TSU SW (0-9)	TRUNK SELECTION UNITS SAME AS (TS0-19) KEY.
		TSTI KEY	TRUNK SELECTION TENS OPERATED WITH TSU SWITCH SELECTS PARTICULAR TRUNK.

ISSUE
5

SFD-10-01-E910

ORIGINATING CLASS OF MARKER TEST
INTRAOFFICE CALL

PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7421-L (4-73)

SD-25800-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
2	10	STP1/ STP2 KEY	JUNCTOR SEQUENCE STEP WITH STP1 KEY OPERATED, ALLOWS MARKER TO MAKE CHANNEL SELECTION IN JUNCTOR GROUP STEP 1, BUT IF NO CHANNEL IS AVAILABLE AND MARKER ADVANCES TO STEP 2, MAKES ALL CHANNELS LOOK BUSY. WITH STP2 KEY OPERATED, MAKES ALL CHANNELS LOOK BUSY IN JUNCTOR GROUP STEP 1, CAUSING MARKER TO ADVANCE TO STEP 2 WHERE IT IS ALLOWED TO MAKE CHANNEL SELECTION.
2	10, FS, FT	CH (0-9) KEY	CHANNEL BLANKS OUT ALL BUT THE DESIRED CHANNEL.
	10, EA	CH SW (0-9)	
2	9, QE	RA (0-3) KEY	ROUTE ADVANCE ALLOWS THE MARKER TO FIND AN IDLE TRUNK ONLY AFTER IT HAS ROUTE ADVANCED EXACTLY THE NUMBER OF TIMES CORRESPONDING TO KEY OR SWITCH SETTING.
	9, QF	RA SW (0-5)	
	9, IB	RA SW (0-11)	
	9, CG	RAU SW (0-9)	
	9/99, DL	RAT1 KEY	
2	10, KX	JSQ (0-5) KEY	JUNCTOR SEQUENCE RESETS THE JUNCTOR SEQUENCE WALKING RELAYS OF THE MARKER TO A DESIRED WALKING POSITION. REFER TO C809 FOR SETTINGS.
	10, JF	JSQ (0-5) SW	
3,4	1	REC KEY	RECORD CAUSES MARKER TO REQUEST A TROUBLE RECORD OF THE TEST CALL BEFORE RELEASING.
3	14	NTC KEY	NO TEST CONNECTOR CAUSES THE MARKER TO USE A NO TEST VERTICAL AS THE ORIGINATING LINE FOR THE TEST.
3	129, ZQY, ZOC	OBS KEY	OBSERVED GROUNDS THE OBST LEAD INSTEAD OF NOBT TO SIMULATE AN ORIGINATING REGISTER ON AN OBSERVED CALL.
3	17	TP/ PMM KEY	TIP PARTY/PARTY MISMATCH TP KEY OPERATED SIGNALS THE MARKER THAT A TIP PARTY CALL IS BEING HANDLED. PMM KEY OPERATED SIGNALS THE MARKER OF A PARTY MISMATCH.
3	17, Z[illegible]	PS KEY	PERMANENT SIGNAL SIGNALS THE MARKER THAT IT IS HANDLING A PERMANENT SIGNAL CALL.
3	17, Z[illegible]	PD KEY	PARTIAL DIAL SIGNALS THE MARKER THAT IT IS HANDLING A PARTIAL DIAL CALL.
3	17	CNR KEY	COIN RETURN SIGNALS THE MARKER THAT THE COIN WAS RETURNED BY THE OR. USED IN SETTING UP TRUNKS HAVING NO COIN RETURN FEATURES OF THEIR OWN.
3	17, K	SCN KEY	STUCK COIN SIGNALS THE MARKER THAT THERE IS A STUCK COIN.
3	17, [illegible]R	HTR/ TC KEY	HEAVY TRAFFIC/TEST CONTINUITY. HTR SIGNALS MARKER TO FUNCTION ON A HEAVY TRAFFIC BASIS. WITH TC KEY OPERATED, APPLIES A POSITIVE POLARITY AS THE DC COMPONENT OF THE CURRENT FLOW TEST OF THE MARKER CONTINUITY FEATURE. KEY NORMAL, APPLIES A NEGATIVE DC COMPONENT.
3	15, ZL	TCT KEY	TEST CONTINUITY TUBE CONTROLS THE TEST APPLIED TO THE MARKER VACUUM TUBES IN THE CONTINUITY TEST FEATURE SO THAT THIS MAY BE LIMITED AS TO RINGING VOLTAGE.
	15, Z[illegible]	LGT KEY	LOOP GROUND TEST KEY NORMAL, CAUSES GROUND TEST TO BE APPLIED TO THE TIP. LGT KEY OPERATED, CAUSES GROUND TESTS TO BE APPLIED BY LOOPING THE TIP AND RING.
3	15	CON/ RV KEY	CONTINUITY/REVERSE CON KEY OPERATED, APPLIES A LOOP CONTINUITY TEST TO THE MARKER CON TUBE. WITH THE RV KEY OPERATED, TRANSFERS THE CONTINUITY TEST FEATURE FROM THE RING TO THE TIP.

* SEE SHEET E910 FOR SHEET NOTES.

SD-25800-01

*SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
3	15	FCG KEY	FALSE CROSS AND GROUND APPLIES AN OPERATE TEST TO THE MARKER FCG RELAY.
3	15	LB/ XLH KEY	LINE BUSY/CROSSED LINE HOLD MAGNET WITH LB KEY OPERATED, MAKES ANY LINE APPEAR BUSY TO MARKER BY CAUSING THE LHMT LEAD TO BE GROUNDED UPON RECEIVING A GROUND FROM THE MARKER ON THE HGK LEAD. XLH KEY OPERATED, SHUNTS THE LHM RELAY WITH 3000-OHMS TO SIMULATED A CONDITION SIMULAR TO CROSSED-LINE HOLD MAGNETS.
3	15	LBL KEY	LINE BUSY AT LINE LINK LBL KEY OPERATED, MAKES ANY LINE APPEAR BUSY TO THE MARKER BY CAUSING THE LHMT LEAD TO BE GROUNDED TO THE MARKER UPON RECEIVING A GROUND ON THE HGK LEAD.
3	1, ZWB, ZWC	TR2/ TRS KEY	SECOND TRIAL/TRANSFER START WITH KEY NORMAL, SIGNALS MARKER TO FUNCTION ON A FIRST TRIAL BASIS. WHEN OPERATED, TR2 KEY SIGNALS MARKER TO FUNCTION ON SECOND TRIAL BASIS. TRS KEY OPERATED, SIGNALS THE MARKER THAT THERE WAS A CONNECTOR START TRANSFER.
2	9	GPA/ GPB KEY	ALLOTTER GROUP A AND B USED ON TESTS REQUIRING THE MARKER TO USE A ROUTE WHICH HAS ALLOTTED TRUNK GROUPS.

ISSUE
5

ORIGINATING CLASS OF MARKER TEST
INTRAOFFICE CALL

SFD-10-01-E911

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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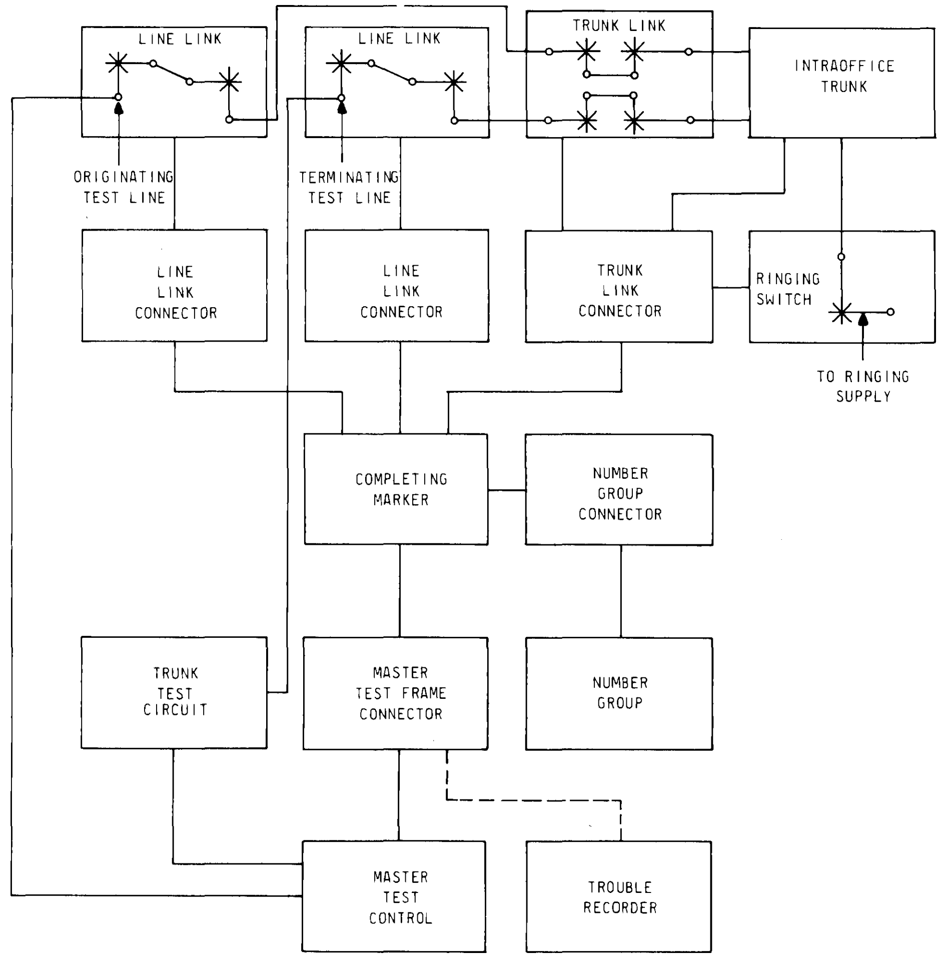
E-7421 (10-71)



BSP 218-247-501, ISS 9
SD-25800-01 MASTER TEST CONTROL CIRCUIT (MTC)
SD-25918-01 TRUNK TEST CIRCUIT (TTC)

SHEET NOTES:

1. KEY(S) OR SWITCH(ES) THAT MUST BE OPERATED TO PERFORM THIS CLASS OF TEST.
2. KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD (SEE SFD-E902/E904/E906.
3. KEY(S) OR SWITCH(ES) WHICH MAY BE OPERATED TO CAUSE ADDITIONAL ACTIONS OR TEST VARIATIONS FOR THIS PARTICULAR TEST.

SD-25800-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
1	68	IAO KEY	INTRAOFFICE CLASS OF TRUNK TEST CAUSES THE TEST CIRCUIT TO CONNECT TO THE TRUNK TEST CIRCUIT AND THEN TO A MARKER THROUGH THE MASTER TEST FRAME CONNECTOR CIRCUIT IN ORDER TO DIRECT THE MARKER TO SET UP A TEST CONNECTION TO THE INTRAOFFICE TRUNK UNDER TEST
	74	TSTB SW (IAO)	
1,2	7,WX	FACD KEY (OPR/N-OPR)	ORIGINATING/FOREIGN AREA CLASS WITH THE FACD KEY NORMAL OR THE CL SWITCH OPERATED TO OR-DP/MF, INDICATES A HOME OFFICE CODE.
	11,NQ	CL SW (OR-DP/MF/FAC-DP/MF)	
	WW	NONE	
1,2	NT,OW	LOC TRNSL (ALL KEYS NORMAL)	TRANSLATOR CLASS OPERATE AS REQUIRED TO PRIME MARKER FOR LOCAL TRANSLATION.
	11,NQ	TRNA SW (LT)	
1,2	19,21	MT (0-11) KEY	MARKER TEST DIRECTS THE MTFC TO CONNECT THIS TEST CIRCUIT (MTC) TO THE MARKER CORRESPONDING TO THE NUMBER OPERATED.
	52	MT SW (0-11)	
	81	MTU SW (0-9)	
		MTTI KEY	
1.	4,KX	A-C (0-9) KEY	CALLED DIGITS (A-C) PRIMES THE MARKER WITH THE THREE DIGIT OFFICE CODE (INTRAOFFICE ROUTE), ASSOCIATED WITH THE TERMINATING TEST LINE.
	4,ZVL	A-C SW (0-9)	
1	4	TTL KEY	TERMINATING TEST LINE OPERATED ON A TRUNK TEST TO TRANSMIT THE D-G DIGITS OF THE TERMINATING TEST LINE TO THE MARKER.
1,2	7,RB	RC (1-15) KEY	RINGING COMBINATION CONTROLS THE RINGING COMBINATION SET UP BY THE MARKER ON THE RINGING SELECTION SWITCH.
	7,RC	RC (1-10) KEY	
		OTRC KEY	
	7,JF	RCU SW (1-10)	
	7,ZYH, ZVI	RCT 1 KEY	
1,2	7,XA, XB,ZG	CST (0-2) KEY	CLASS OF SERVICE TENS CONTROLS THE CLASS-OF-SERVICE TENS DIGIT TRANSMITTED TO THE MARKER.
	7,XB	CST (0-9) KEY	
	7,JF	CST SW (0-9)	
1,2	7,JH, RY	CSU (0-9) KEY	CLASS OF SERVICE UNITS CONTROLS THE CLASS-OF-SERVICE UNITS DIGIT TRANSMITTED TO THE MARKER.
	7,JF	CSU SW (0-9)	
1,2	37, GC,GD	CGB KEY (OPR/N-OPR)	CLASS GROUP B USED WHEN OFFICE HAS A MAXIMUM OF 60 CLASSES OF SERVICE. SELECTS CLASS GROUP A WITH KEY IN NORMAL POSITION.
		NONE	
1,2	7,JI	CRU (0-9) KEY	CUSTOMER RATE TREATMENT UNITS PROVIDE RATE TREATMENT INFORMATION TO MARKER.
	7,JF	CRU SW (0-9)	
		NONE	NO RATE TREATMENT REQUIRED.

SD-25800-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
1,2	7,ED	CSGA/ CSGB KEY	RATE TREATMENT GROUP A AND B CONTROLS THE RATE TREATMENT GROUP INDICATION TO MARKER.
		NONE	NO RATE TREATMENT REQUIRED.
1		TLK KEY	TALK USED TO COMPLETE TIP AND RING LEADS TO SIMULATE LINE AT MTF JACK, LAMF, AND KEY CIRCUIT. TLK KEY LOC ON TRUNK TEST PANEL.
1	1	ST/RL KEY	START AND RELEASE OPERATED TO ST INITIATES A TEST CALL. OPERATED TO RL CAUSES TEST CALL AND ALL ASSOCIATED CIRCUITS TO RELEASE.
2	9	FS/ NTFS KEY	FRAME SELECTION/NO TEST FRAME SELECTION PERMITS SELECTION OF A PARTICULAR TRUNK LINK FRAME UNDER CONTROL OF THE FG(0-2) KEYS AND FS(0-9) KEYS OR SWITCH, WITH FS KEY OR WITHOUT NTFS KEY, FIRST TESTING FOR IDLE TRUNKS ON THAT TRUNK LINK FRAME.
2	U	FG (0,1) KEY	TRUNK LINK FRAME GROUP USED IN CONJUNCTION WITH THE FS(0-9) KEYS OR SWITCH WHEN THE FS OR NTFS KEYS ARE OPERATED. INDICATES TENS DIGIT OF TRUNK LINK FRAME NUMBER.
	79	FG (0-2) KEY	
	80	FG (1,2) KEY	FOR FRAME GROUP 0, THE FG KEY SHOULD BE IN THE NORMAL POSITION
2	U, 79	FS (0-9) KEY	TRUNK LINK FRAME UNITS WITH FS KEY OPERATED MAKES ALL TRUNK LINK FRAMES EXCEPT THAT CORRESPONDING TO THE OPERATED FS(0-9) AND FG(0-2) KEYS LOOK BUSY.
	80	FS SW (0-9)	
2	9	TS/ NTTS KEY	TRUNK SELECTION/NO TEST TRUNK SELECTION MAKES ALL TRUNKS EXCEPT THE ONE CORRESPONDING TO THE OPERATED TS(0-19) KEYS OR SWITCH LOOK BUSY TO THE MARKER AND IF NTTS KEY IS OPERATED, WILL OPERATE THE TST RELAY IN THE TLF WHICH REMOVES THE PLUGGED-BUSY CONDITION FROM ALL TRUNKS ON THAT TRUNK LINK FRAME.
2	9,KX	TS (0-19) KEY	TRUNK SELECTION MAKES ALL TRUNKS EXCEPT ONE CORRESPONDING TO THE OPERATED TS(0-9) KEY LOOK BUSY TO THE MARKER.
	9,JF	TSU SW (0-9)	TRUNK SELECTION UNITS SAME AS TS(0-19) KEYS.
		TSTI KEY	TRUNK SELECTION TENS OPERATED WITH TSU SWITCH SELECTS PARTICULAR TRUNK.
2	9,QE	RA (0-3) KEY	ROUTE ADVANCE ALLOWS THE MARKER TO FIND AN IDLE TRUNK ONLY AFTER IT HAS ROUTE ADVANCED EXACTLY THE NUMBER OF TIMES CORRESPONDING TO KEY OR SWITCH SETTING.
	9,QF	RA SW (0-5)	
	9,IB	RA SW (0-11)	
	9,CG	RAU SW (0-9)	
	9/99 DL	RATI KEY	
2	9	GPA/ GPB KEY	ALLOTTER GROUP A AND B USED ON TEST REQUIRING THE MARKER TO USE A ROUTE WHICH HAS ALLOTTED TRUNK GROUPS.
3		PTP KEY	PRETRIP APPLIES A PRETRIP TEST TO THE RT RELAY IN THE INCOMING TRUNK. KEY LOC ON TRUNK TEST PANEL.
3		TRP KEY	TRIP APPLIES A TRIP TEST TO THE RT RELAY IN THE INCOMING TRUNK. KEY LOC ON TRUNK TEST PANEL.
3		ANS KEY	ANSWER WHEN OPERATED TO ANSWER EXTENDS THE TIP AND RING LEADS TOWARD A TERMINATING TEST LINE CONSISTING OF RESISTORS AND RELAYS SIMULATING AN INCOMING TRUNK CIRCUIT. THE RESISTANCE IN THIS LOOP GIVES AN OPERATE TEST TO CALLED PARTY SUPERVISORY RELAY OF THE TRUNK CIRCUITS. KEY LOC ON TRUNK PANEL.

ISSUE
5

SFD-10-01-E912

INTRAOFFICE CLASS OF TRUNK TEST

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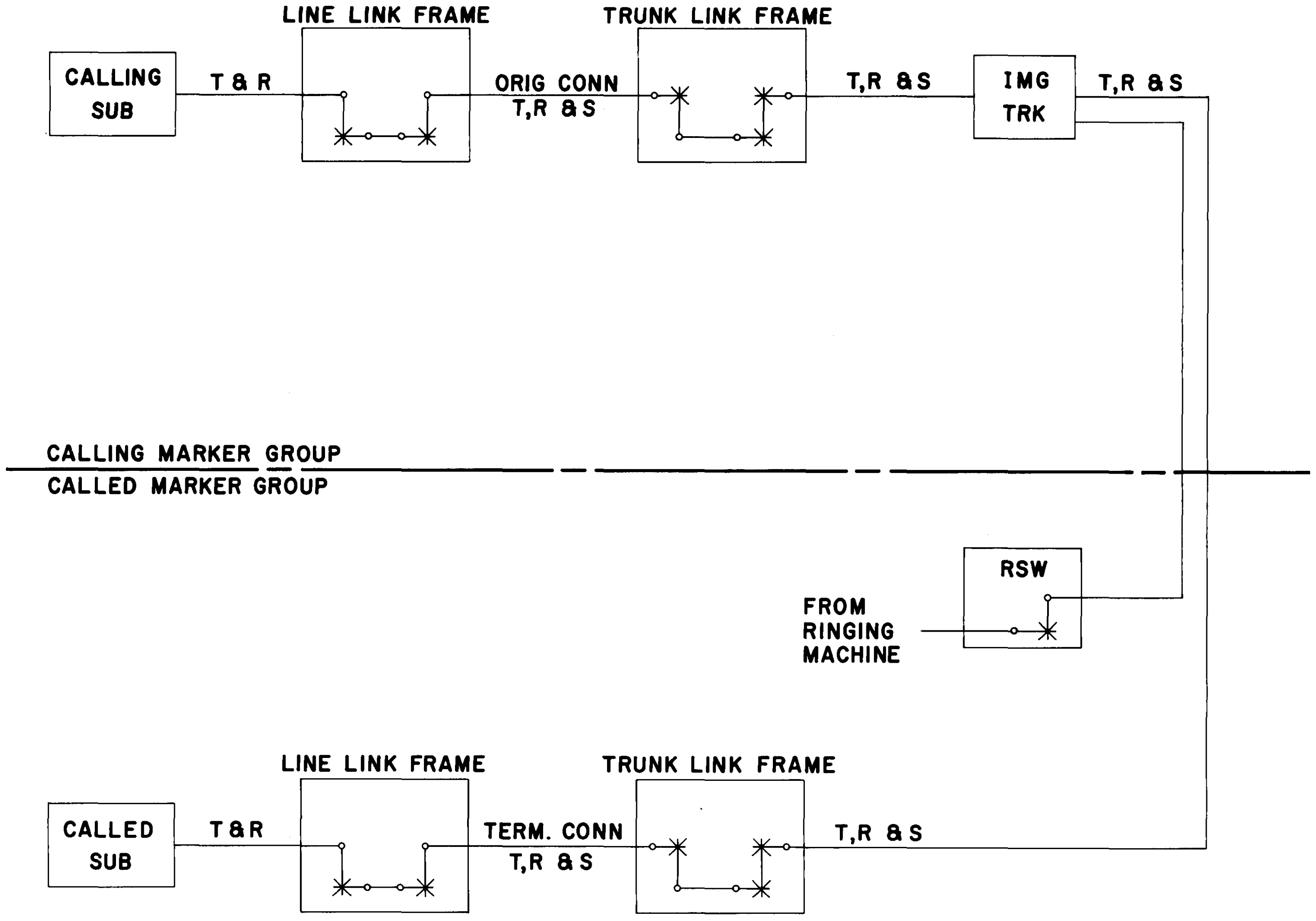
DWG SIZE 6S
BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



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CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE 5

PART F0
INTERMARKER GROUP CALL
TROUBLE CARD ANALYSIS

BELL TELEPHONE LABORATORIES
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DWG SIZE 6S

SFD-10-01-F001

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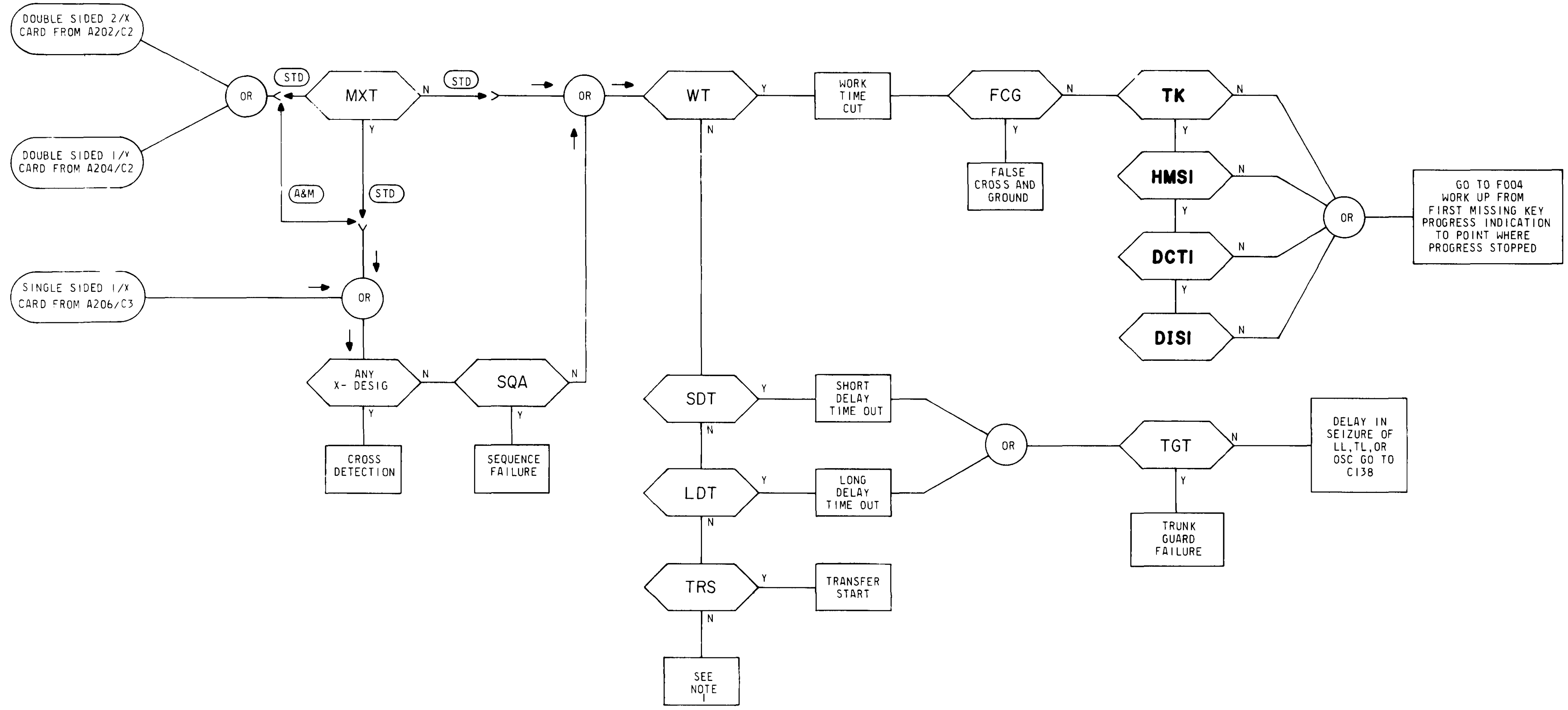
E-7421 (10-71)

CALLING MARKER GROUP



SHEET NOTES:

1. THERE ARE SEVERAL POSSIBILITIES OF OBTAINING A CARD WITH OR WITHOUT AN MXT PUNCH AND WITHOUT ANY X-, SQA, WT, SDT, LDT, OR TRS PUNCHES. THESE INCLUDE:
   - A. A FALSELY OPERATED FTC- RELAY IN A NORMAL MARKER WILL OPERATE MXT RELAY CAUSING A TROUBLE RECORD CARD WITH NO X- OR SQA INDICATION. (ONLY DOUBLE SIDED CARDS WILL SHOW AN MXT PUNCH).
   - B. A MOMENTARY CROSS IN THE JUNCTOR WALKING CIRCUIT WILL OPERATE MXT RELAY CAUSING A RECORD AS IN (A) ABOVE.
   - C. THERE MAY BE MISSING PUNCHES, AS A RESULT OF A DEFECTIVE TROUBLE RECORDER OR DEFECTIVE WIRING OR RELAY CONTACTS IN LEADS TO TROUBLE RECORDER.

ISSUE
5

SFD-10-01-F002

FLOW CHART FOR ANALYSIS OF TROUBLE
CARD FOR INTERMARKER GROUP
CALL-CALLING MARKER GROUP

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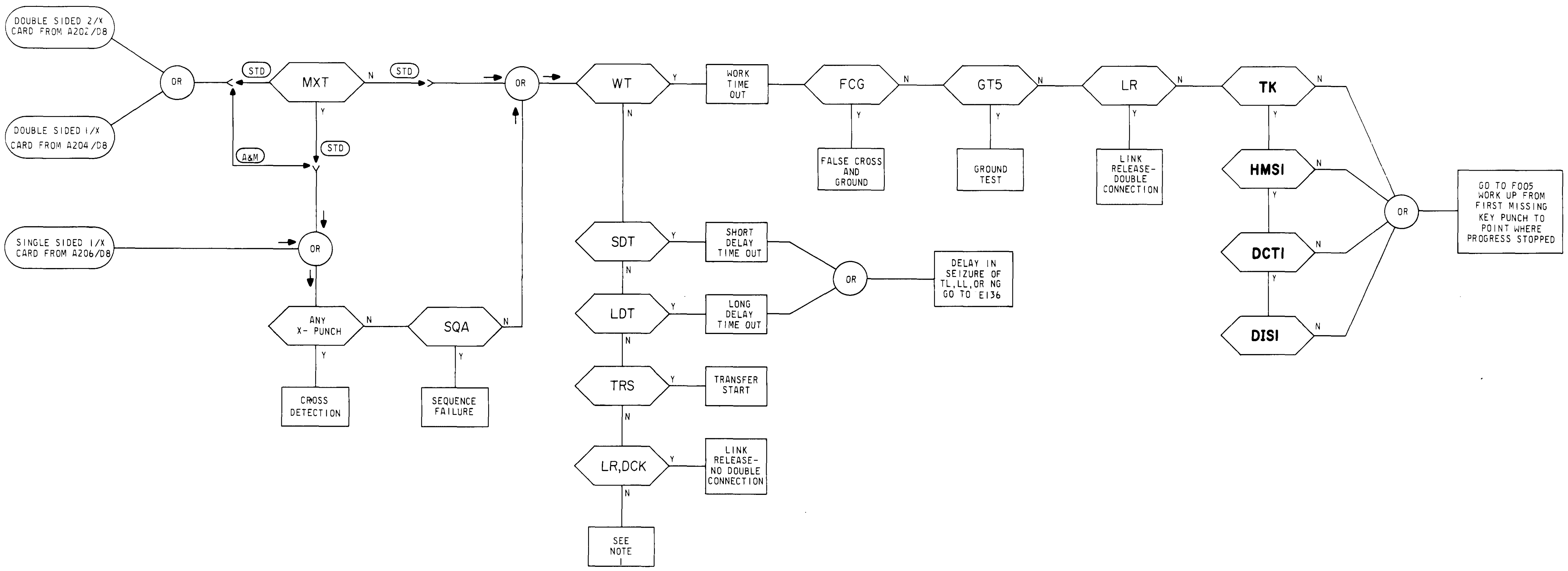
DWG SIZE 6S
BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

CALLED MARKER GROUP


DOUBLE SIDED 2/X CARD FROM A202/D8
DOUBLE SIDED 1/X CARD FROM A204/D8
OR
STD
MXT
N
STD
Y
A&M
STD
SINGLE SIDED 1/X CARD FROM A206/D8
OR
ANY X- PUNCH
N
Y
CROSS DETECTION
SQA
N
Y
SEQUENCE FAILURE
OR
WT
Y
WORK TIME OUT
N
SDT
Y
SHORT DELAY TIME OUT
N
LDT
Y
LONG DELAY TIME OUT
N
OR
DELAY IN SEIZURE OF TL,LL,OR NG GO TO E136
TRS
Y
TRANSFER START
N
LR,DCK
Y
LINK RELEASE-NO DOUBLE CONNECTION
N
SEE NOTE 1
FCG
N
Y
FALSE CROSS AND GROUND
GT5
N
Y
GROUND TEST
LR
N
Y
LINK RELEASE-DOUBLE CONNECTION
TK
N
Y
HMSI
N
Y
DCTI
N
Y
DISI
N
OR
GO TO F005 WORK UP FROM FIRST MISSING KEY PUNCH TO POINT WHERE PROGRESS STOPPED

SHEET NOTES:

1. THERE ARE SEVERAL POSSIBILITIES OF OBTAINING A CARD WITH OR WITHOUT AN MXT PUNCH AND WITHOUT ANY X-, SQA, WT, SDT, LDT, TRS, OR LR PUNCHES. THESE INCLUDE:
   - A. A FALSELY OPERATED FTC- RELAY IN A NORMAL MARKER WILL OPERATE MXT RELAY CAUSING A TROUBLE RECORD WITH NO X- OR SQA INDICATION. (ONLY DOUBLE SIDED CARDS WILL SHOW AN MXT PUNCH).
   - B. A MOMENTARY CROSS IN THE JUNCTOR WALKING CIRCUIT WILL OPERATE MXT RELAY CAUSING A RECORD AS IN (A) ABOVE.
   - C. THERE MAY BE MISSING PUNCHES AS A RESULT OF A DEFECTIVE TROUBLE RECORDER OR DEFECTIVE WIRING OR RELAY CONTACTS IN LEADS TO TROUBLE RECORDER.

ISSUE
5

FLOW CHART FOR ANALYSIS OF
TROUBLE CARD FOR INTERMARKER
GROUP CALL-CALLED MARKER
GROUP

SFD-10-01-F003

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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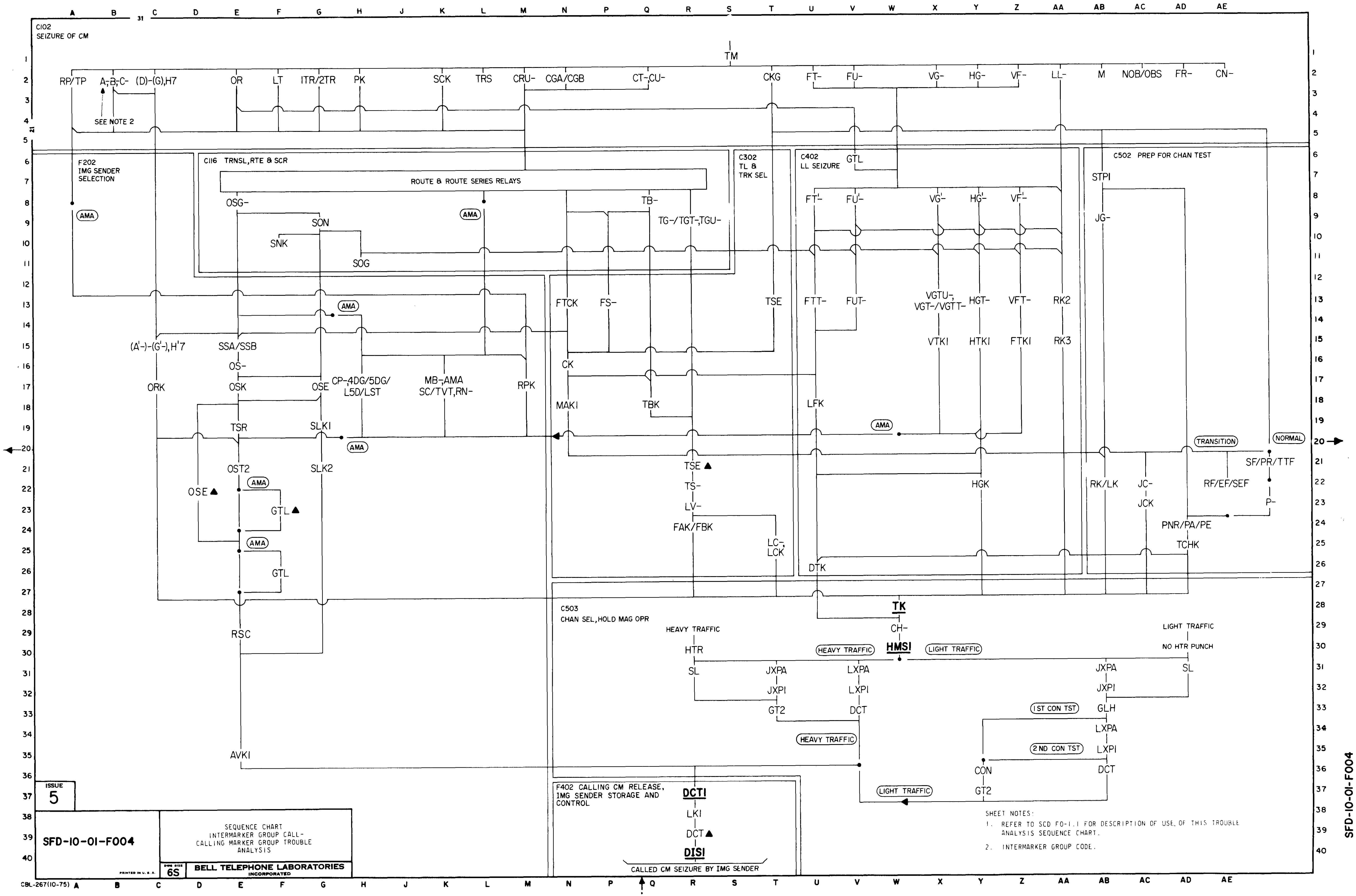
E-7421 (10-71)



SHEET NOTES:

1. REFER TO SCD FO-1.1 FOR DESCRIPTION OF USE OF THIS TROUBLE ANALYSIS SEQUENCE CHART.
2. INTERMARKER GROUP CODE.

ISSUE
5

SFD-10-01-F004

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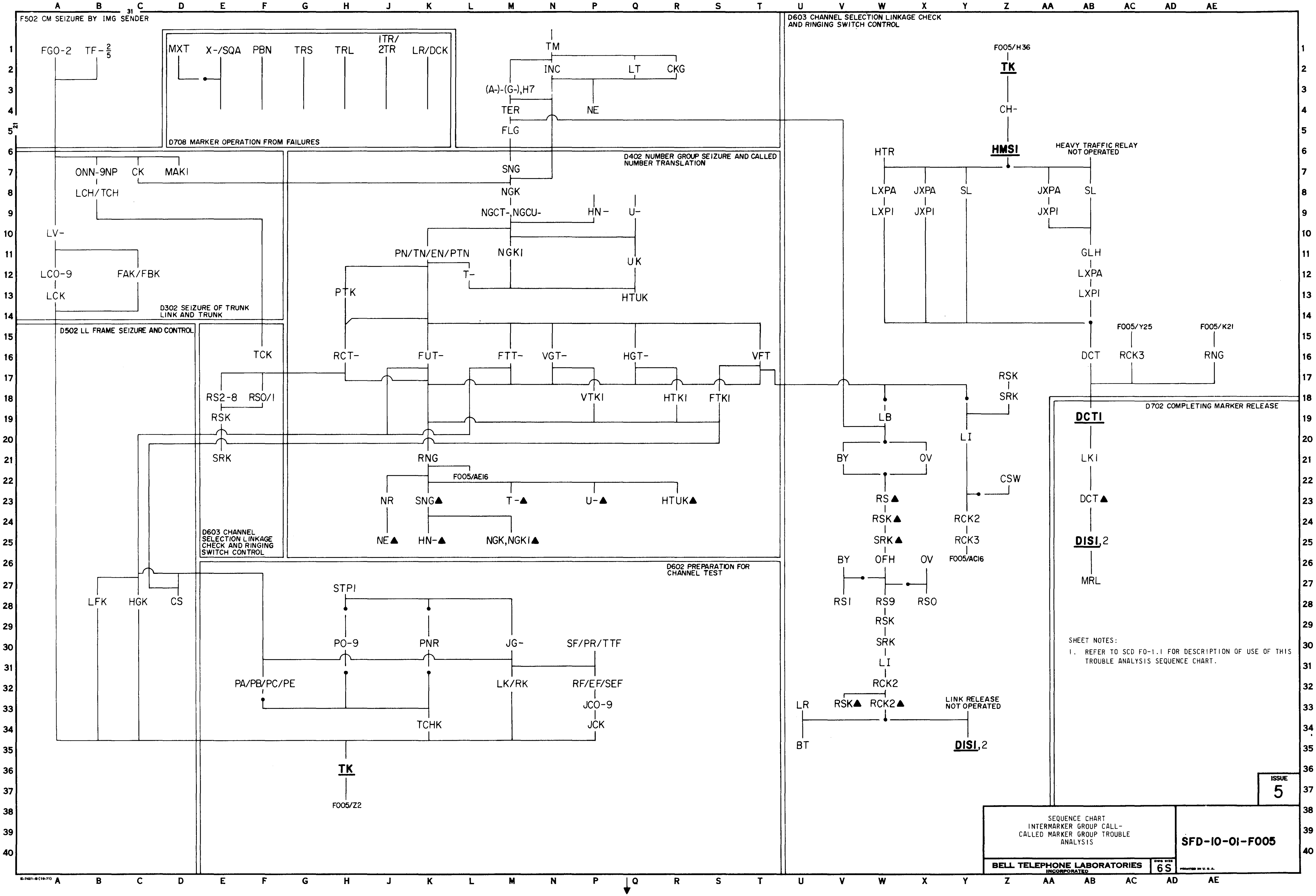
SEQUENCE CHART
INTERMARKER GROUP CALL-
CALLING MARKER GROUP TROUBLE
ANALYSIS

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

CBL-267(10-75)

SFD-10-01-F004



SHEET NOTES:

1. REFER TO SCD FO-1.1 FOR DESCRIPTION OF USE OF THIS TROUBLE ANALYSIS SEQUENCE CHART.

ISSUE 5

SEQUENCE CHART
INTERMARKER GROUP CALL-
CALLED MARKER GROUP TROUBLE
ANALYSIS

SFD-10-01-F005

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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E-7421-B (10-71)

BRUNING 44-131 24092

SFD-10-01-F005

ESTABLISHING INTERMARKER GROUP CONNECTION

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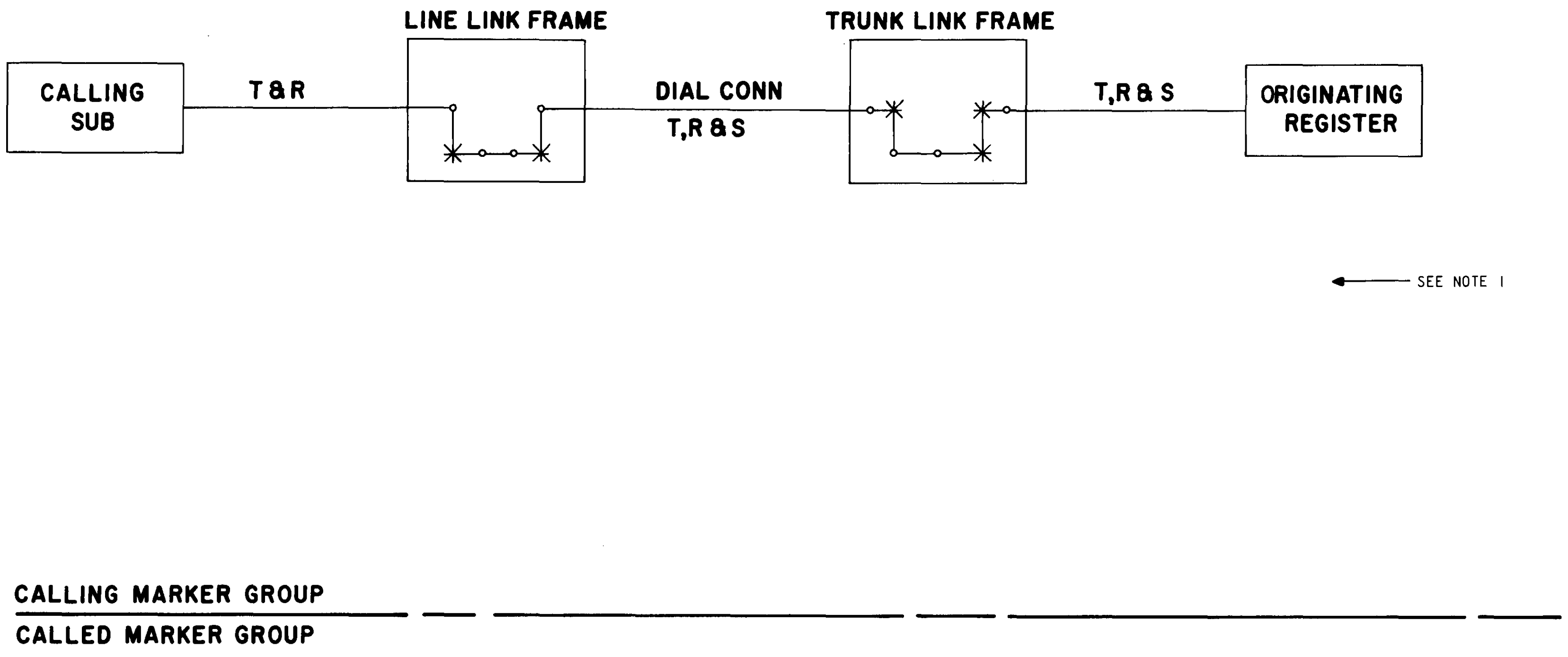

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SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL THE COMPLETING MARKER INPUT AND CODE TRANSLATION IN THE CALLING MARKER GROUP ARE ALMOST IDENTICAL TO THE INPUT AND TRANSLATION FUNCTIONS ON AN OUTGOING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE 5

PART F1
INPUT TO CALLING COMPLETING MARKER
AND CODE TRANSLATION

SFD-10-01-F101

BELL TELEPHONE LABORATORIES
INCORPORATED

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SFD-10-01-F101
2 SHEETS, SHEET 1

F-7421 (10-71)

ESTABLISHING INTERMARKER GROUP CONNECTION
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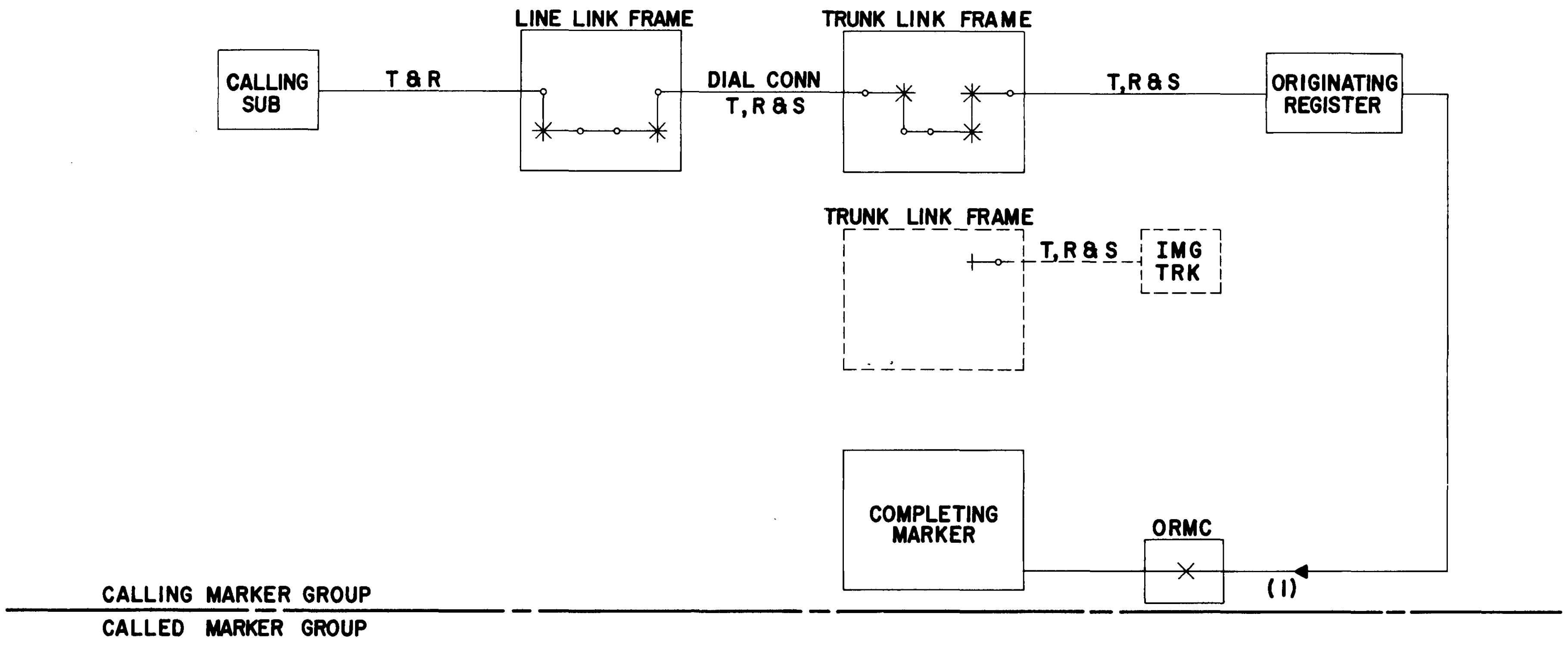

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CAUTION !

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SFD-10-01-F201
2 SHEETS, SHEET 1

ISSUE
5

PART F2
SELECTION AND CONTROL
OF INTERMARKER GROUP
SENDER

SFD-10-01-F201

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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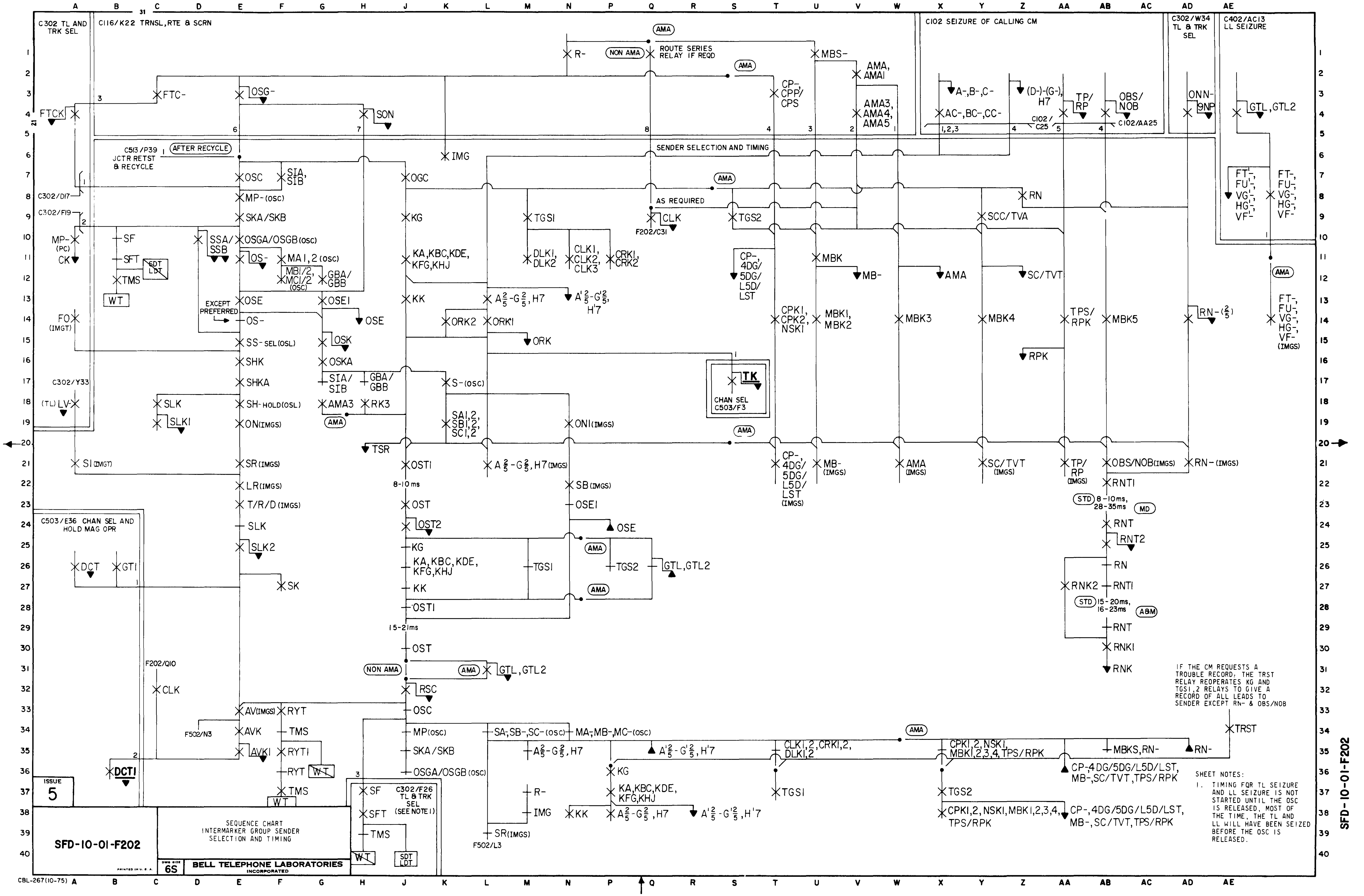

IF THE CM REQUESTS A TROUBLE RECORD: THE TRST RELAY REOPERATES KG AND TGS1,2 RELAYS TO GIVE A RECORD OF ALL LEADS TO SENDER EXCEPT RN- & OBS/NOB

SHEET NOTES:

1. TIMING FOR TL SEIZURE AND LL SEIZURE IS NOT STARTED UNTIL THE OSC IS RELEASED. MOST OF THE TIME, THE TL AND LL WILL HAVE BEEN SEIZED BEFORE THE OSC IS RELEASED.

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SFD-10-01-F202

SEQUENCE CHART
INTERMARKER GROUP SENDER
SELECTION AND TIMING

DWG SIZE
6S

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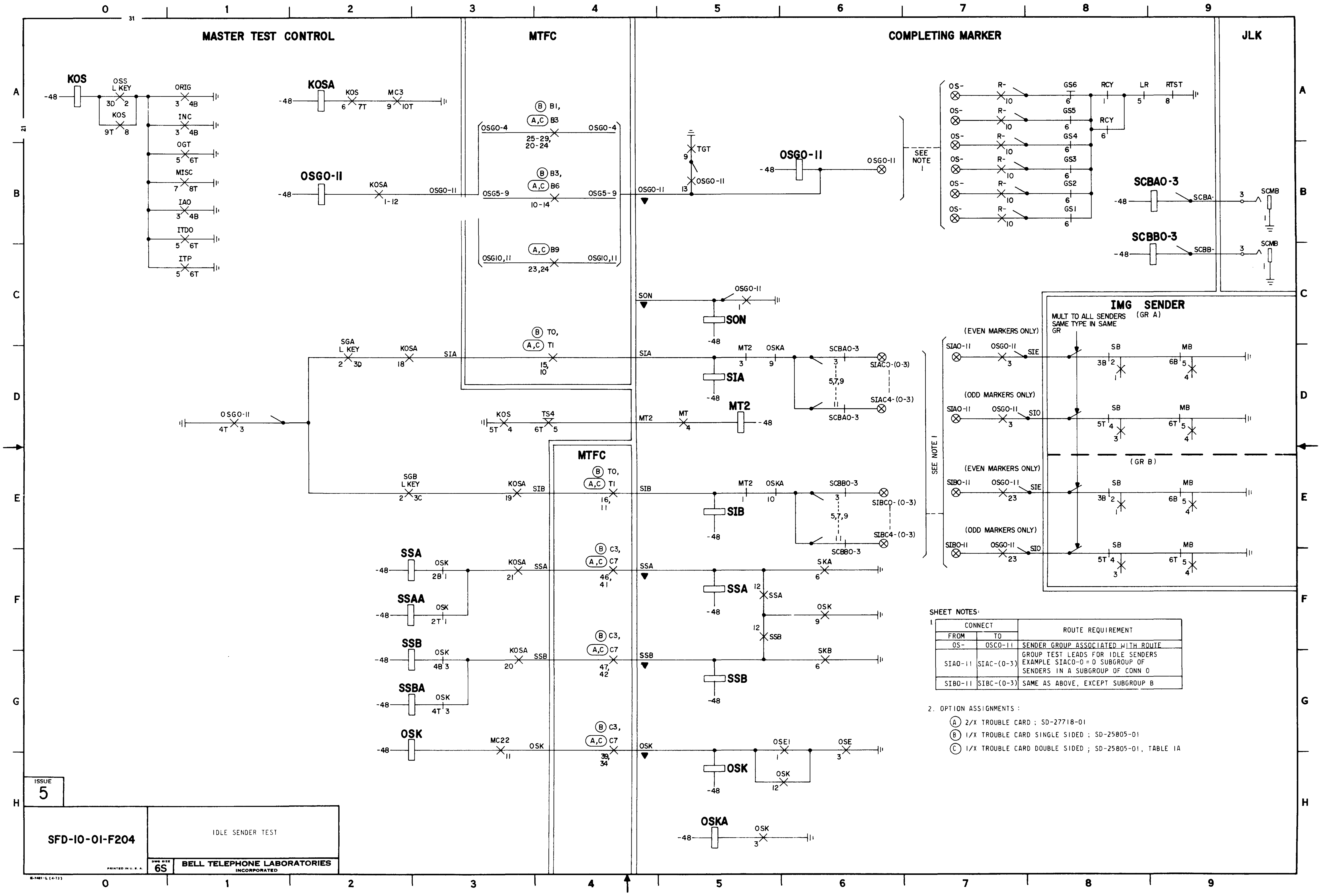
CBL-267(10-75)

SFD-10-01-F202



SHEET NOTES:

1.

CONNECT		ROUTE REQUIREMENT
FROM	TO	
OS-	OSCO-11	SENDER GROUP ASSOCIATED WITH ROUTE
SIAO-11	SIAC-(0-3)	GROUP TEST LEADS FOR IDLE SENDERS EXAMPLE SIACO-0 = 0 SUBGROUP OF SENDERS IN A SUBGROUP OF CONN 0
SIBO-11	SIBC-(0-3)	SAME AS ABOVE, EXCEPT SUBGROUP B

2. OPTION ASSIGNMENTS :

Ⓐ 2/X TROUBLE CARD ; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED ; SD-25805-01
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED ; SD-25805-01, TABLE 1A

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SFD-10-01-F204

IDLE SENDER TEST

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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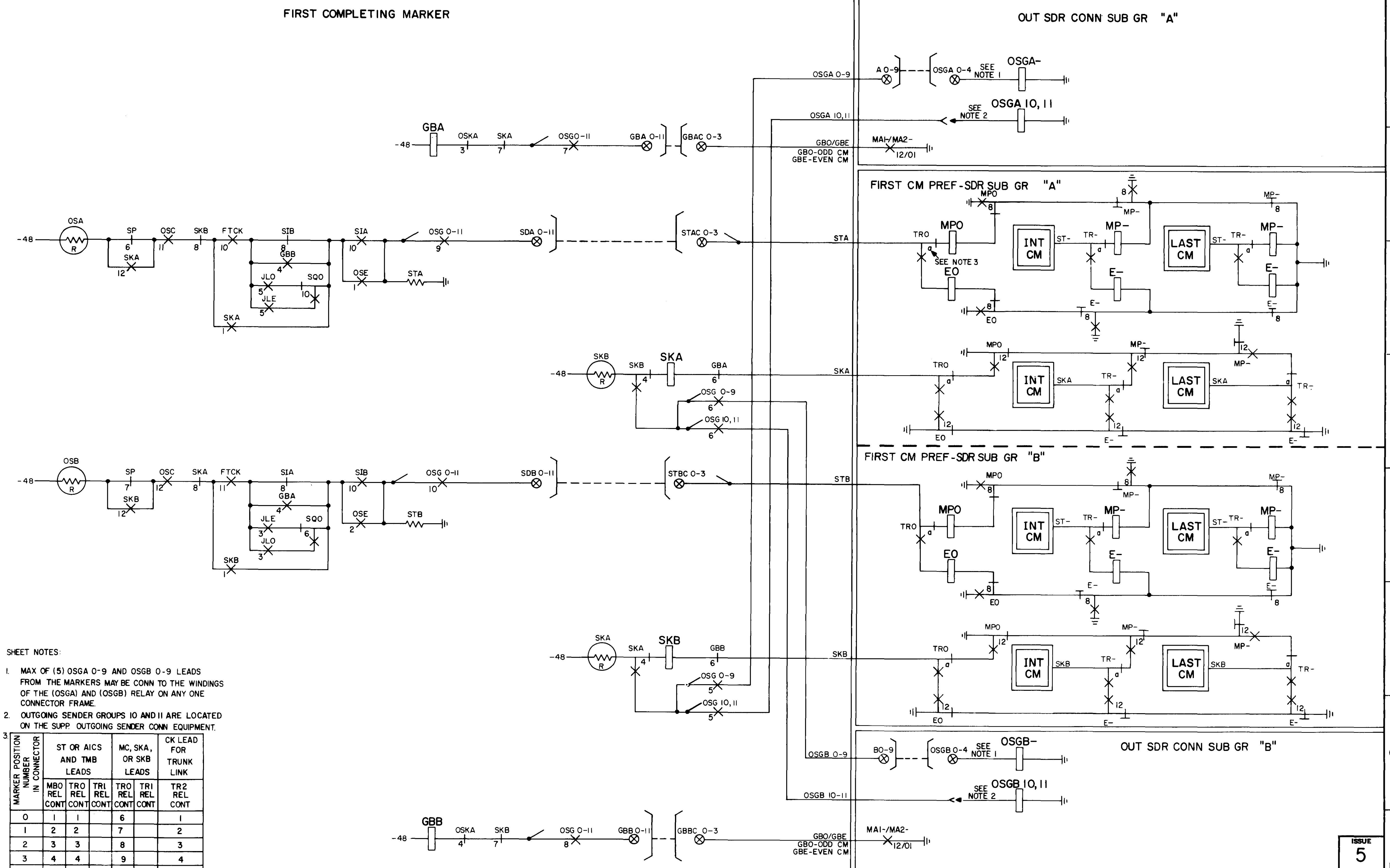
E-7481-L (4-73)



SHEET NOTES:

1. MAX OF (5) OSGA 0-9 AND OSGB 0-9 LEADS FROM THE MARKERS MAY BE CONN TO THE WINDINGS OF THE (OSGA) AND (OSGB) RELAY ON ANY ONE CONNECTOR FRAME.
2. OUTGOING SENDER GROUPS 10 AND 11 ARE LOCATED ON THE SUPP. OUTGOING SENDER CONN EQUIPMENT.
3.

MARKER POSITION NUMBER IN CONNECTOR	ST OR AICS AND TMB LEADS			MC, SKA, OR SKB LEADS		CK LEAD FOR TRUNK LINK
	MBO REL CONT	TRO REL CONT	TR1 REL CONT	TRO REL CONT	TR1 REL CONT	TR2 REL CONT
0	1	1		6		1
1	2	2		7		2
2	3	3		8		3
3	4	4		9		4
4	5	5		10		5
5	6		1		6	6
6	7		2		7	7
7	8		3		8	8

ISSUE
5

SENDER SUBGROUP SELECTION

SFD-10-01-F205

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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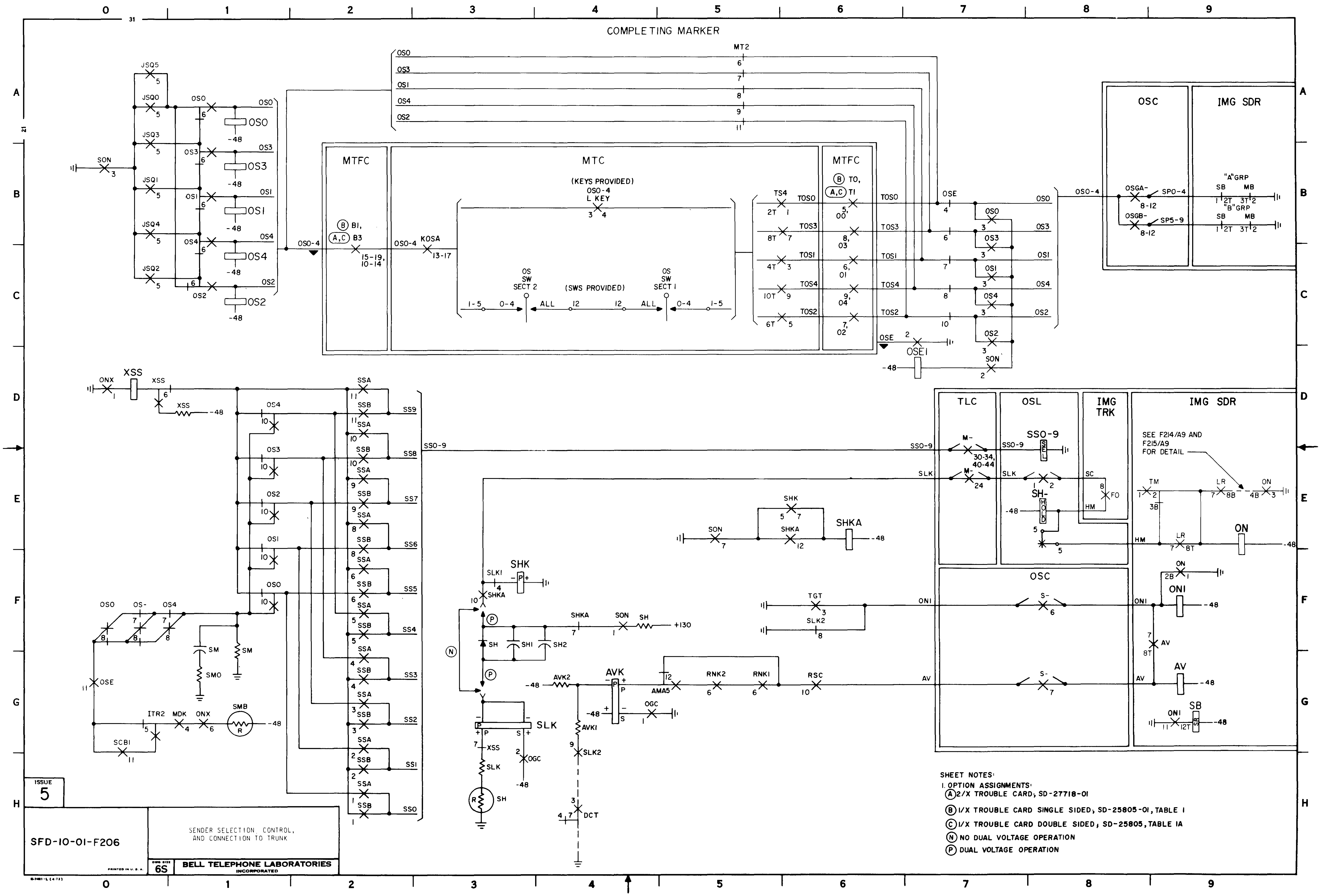
E-7421 (10-71)

SFD-10-01-F205



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD, SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED, SD-25805-01, TABLE 1

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED, SD-25805, TABLE 1A

Ⓝ NO DUAL VOLTAGE OPERATION

Ⓟ DUAL VOLTAGE OPERATION

ISSUE
5

SFD-10-01-F206

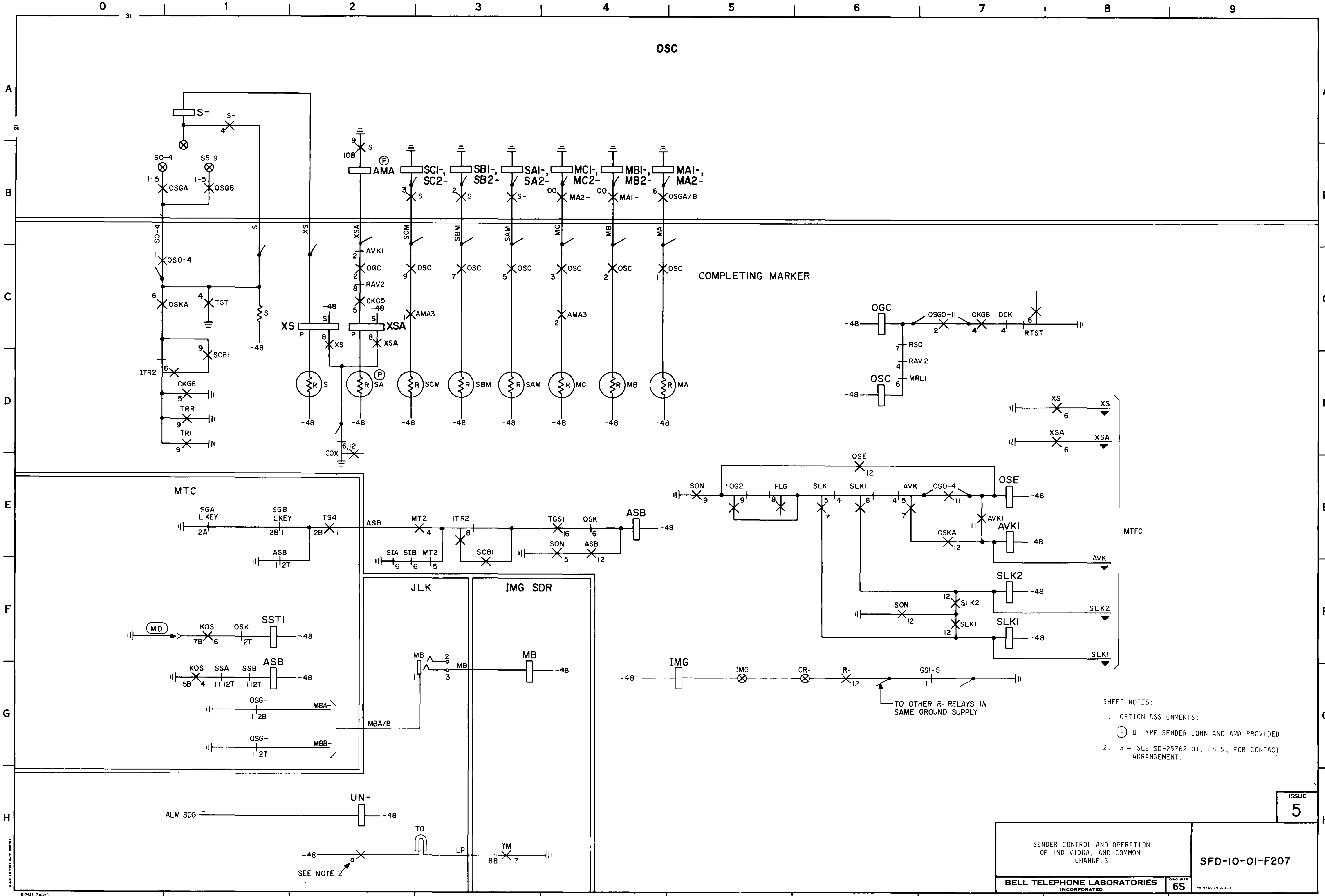
SENDER SELECTION, CONTROL,
AND CONNECTION TO TRUNK

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-F206



SHEET NOTES:

1. OPTION ASSIGNMENTS:

   Ⓟ U TYPE SENDER CONN AND AMA PROVIDED.

2. a – SEE SD-25762-01, FS 5, FOR CONTACT ARRANGEMENT.

ISSUE
5

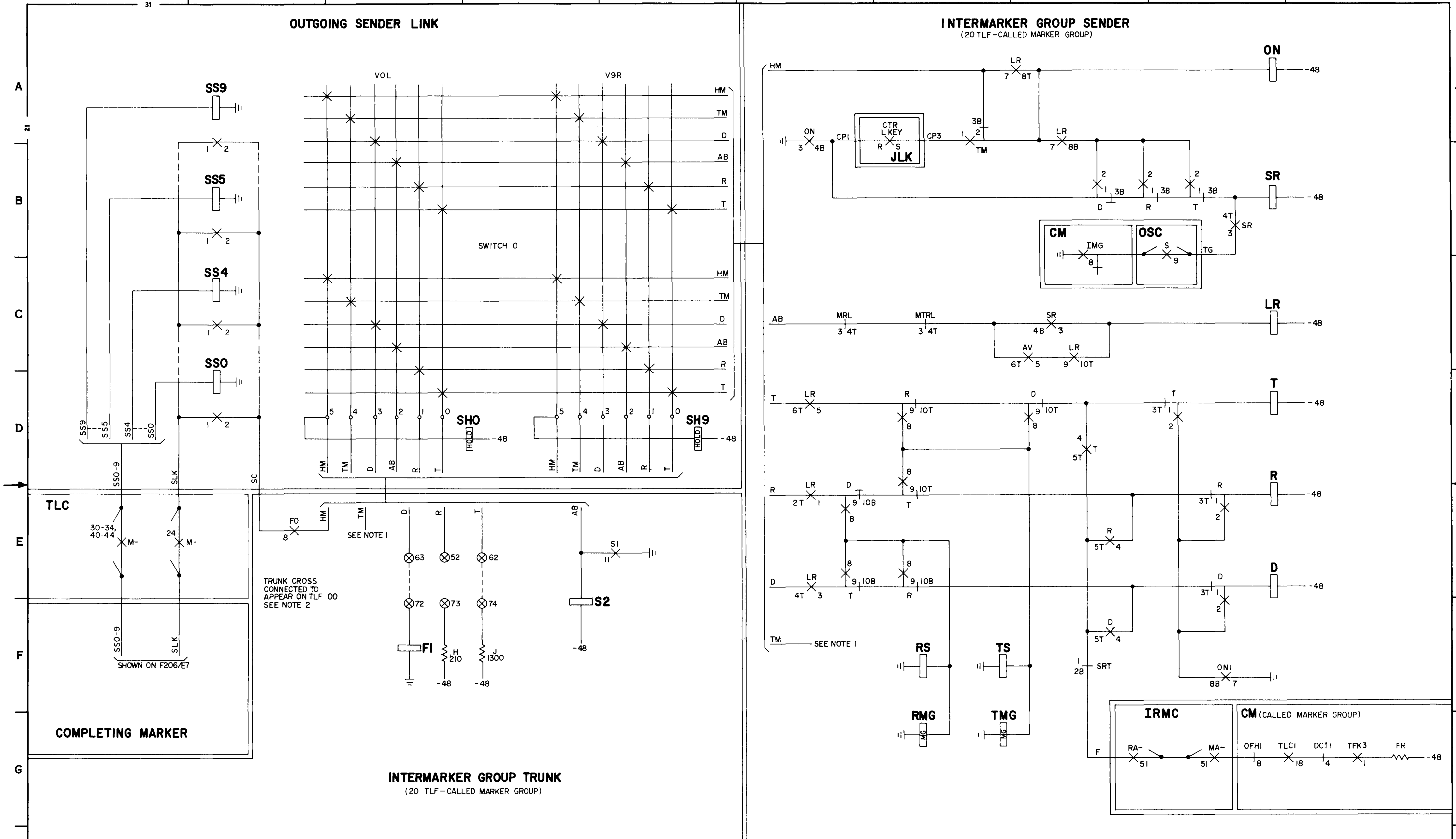
SENDER CONTROL AND OPERATION
OF INDIVIDUAL AND COMMON
CHANNELS

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SFD-10-01-F207

PRINTED IN U. S. A.



SHEET NOTES:

1. THE TM PATH IS USED ONLY ON TANDEM AND AMA CALLS. THE TANDEM PATH IN THE COMPLETING MARKER WILL BE SHOWN IN A SUBSEQUENT SECTION OF THIS SFD. THE AMA PART WILL BE SHOWN IN A SUBSEQUENT SFD.
2. CROSS CONNECT TERMINALS 52,62, AND 63 TO 72,73, AND 74 ACCORDING TO TRUNK LINK FRAME ON WHICH TRUNK APPEARS IN CALLED MARKER GROUP. SEE SD-26141-01, NOTE 201 FOR CROSS CONNECTING INFORMATION.

ISSUE
5

SFD-10-01-F208

SENDER CONTROL AND
TRUNK LINK FRAME
REGISTRATION FOR
CALLED MARKER GROUP - 20 TLF

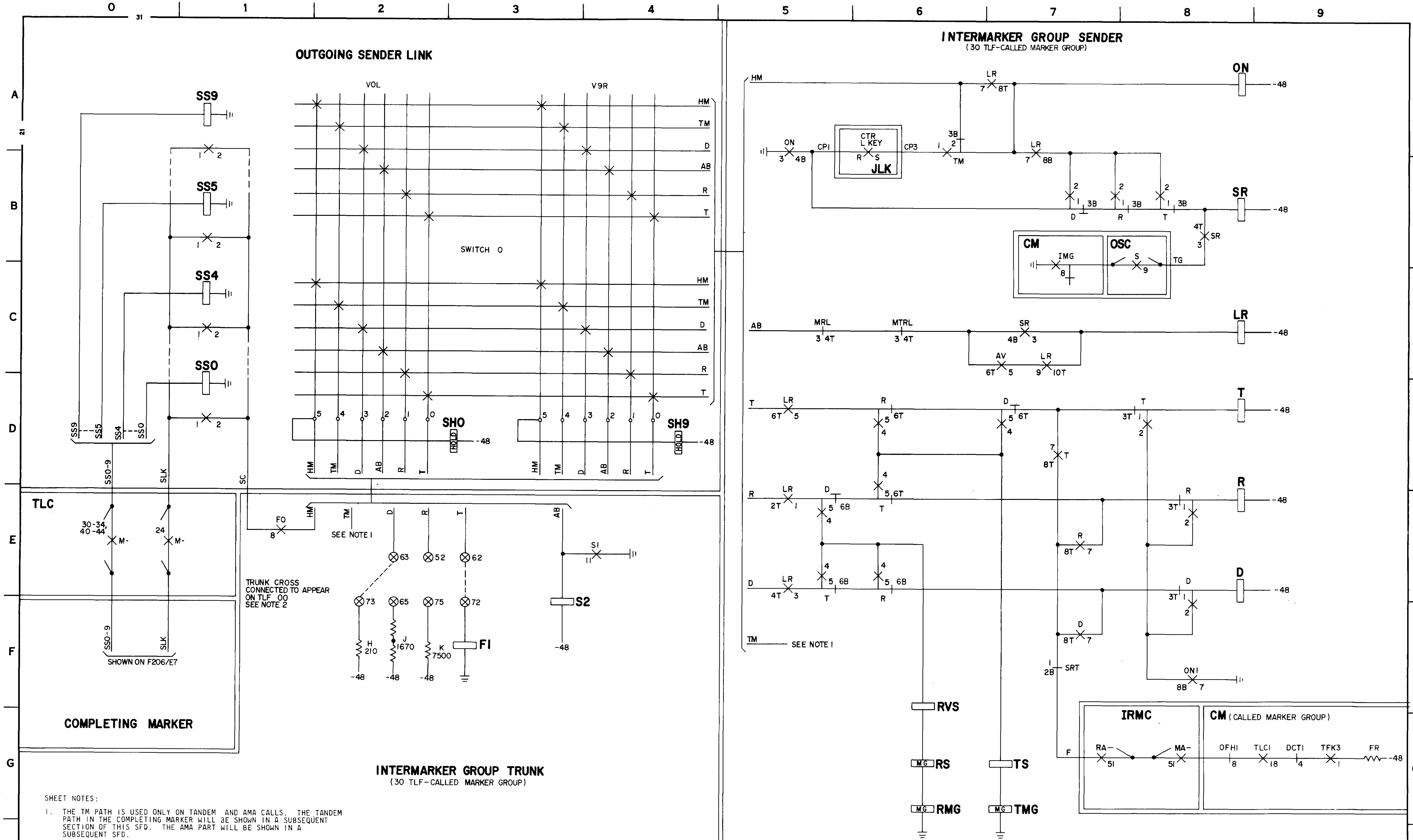
PRINTED IN U.S.A.

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-F208



SHEET NOTES:

1. THE TM PATH IS USED ONLY ON TANDEM AND AMA CALLS. THE TANDEM PATH IN THE COMPLETING MARKER WILL BE SHOWN IN A SUBSEQUENT SECTION OF THIS SFD. THE AMA PART WILL BE SHOWN IN A SUBSEQUENT SFD.
2. CROSS CONNECT TERMINALS 52,62,AND 63 TO 65,72,73, AND 75 ACCORDING TO TRUNK LINK FRAME ON WHICH TRUNK APPEARS IN CALLED MARKER GROUP. SEE SD-26141-01, NOTE 202 FOR CROSS CONNECTING INFORMATION.

ISSUE
5

SENDER CONTROL AND TRUNK
LINK FRAME REGISTRATION
FOR CALLED MARKER GROUP-
30 TLF

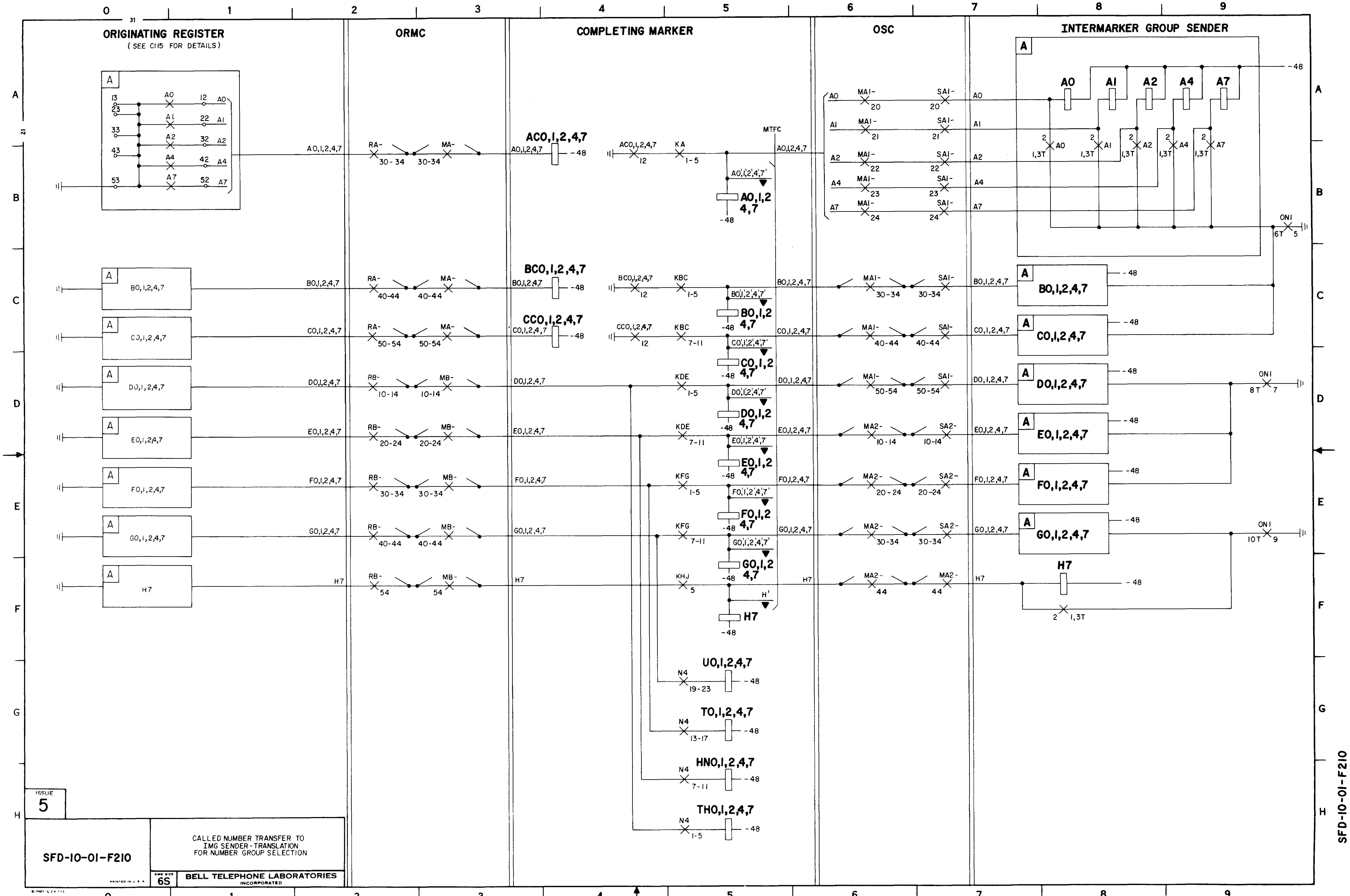
SFD-10-01-F209

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PRINTED IN U. S. A.

SFD-10-01-F209



ISSUE
5

SFD-10-01-F210

CALLED NUMBER TRANSFER TO
IMG SENDER-TRANSLATION
FOR NUMBER GROUP SELECTION

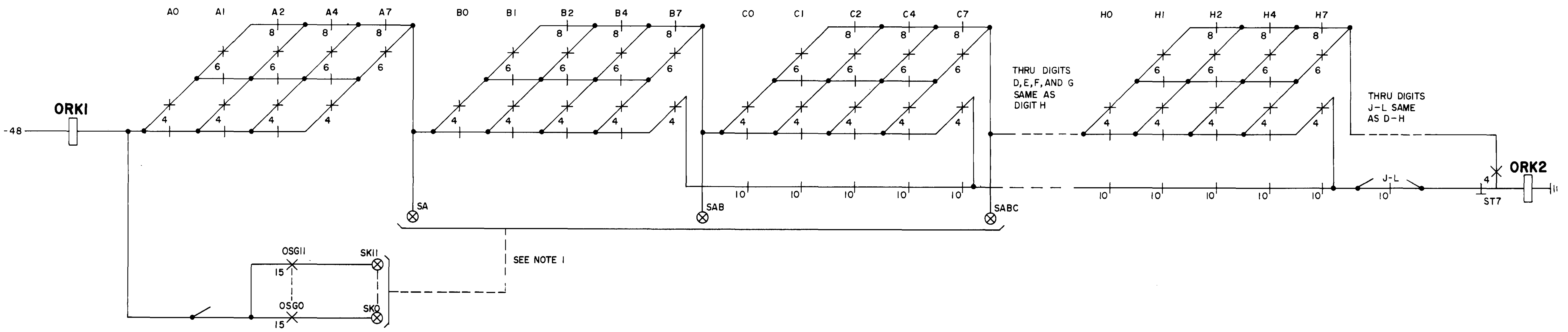
DWG SIZE 6S

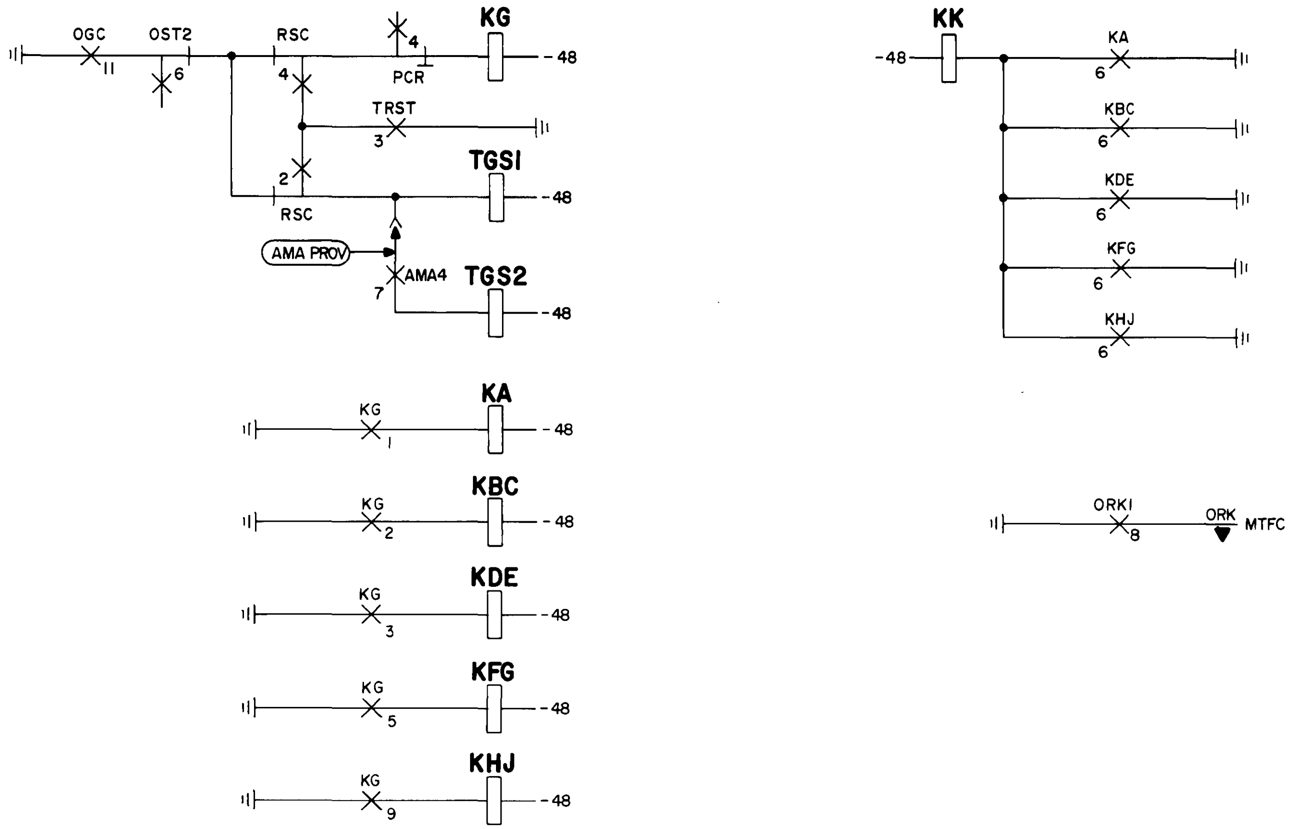
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-F210

COMPLETING MARKER





SHEET NOTES:

1.

FEATURE OR CONDITION	CONNECT		CONDITION
	FROM	TO	
SKIP CHECK OF DIGITS INFORMATION TRANSMITTED TO THE IMG SENDER	SKO-11	SA	SKIP CHECK OF "A" DIGIT
		SAB	SKIP CHECK OF "A" & B DIGITS
		SABC	SKIP CHECK OF "A", B, & C DIGITS

ISSUE 5

CALLED NUMBER DIGIT CHECK

SFD-10-01-F211

BELL TELEPHONE LABORATORIES INCORPORATED

6S

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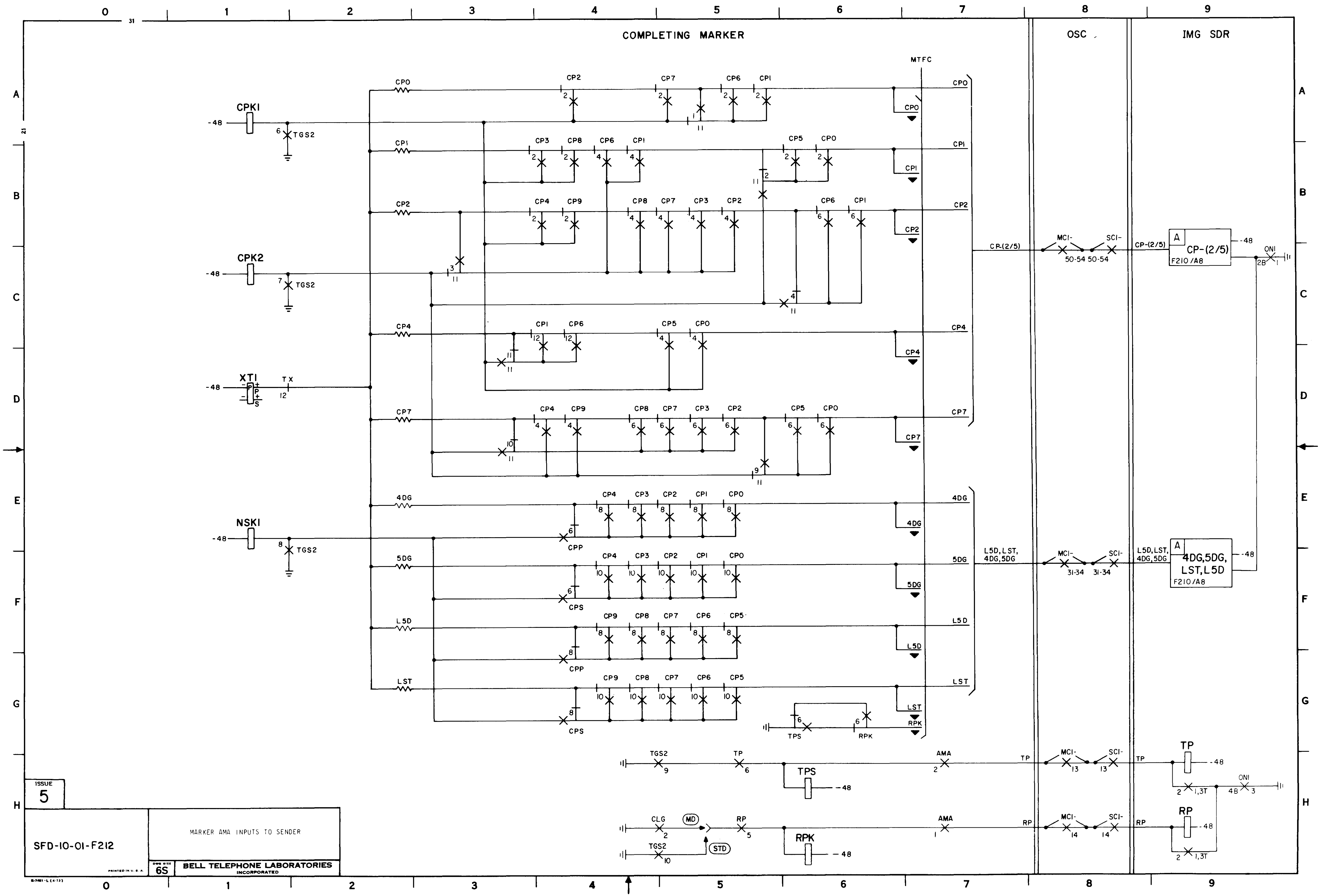


ISSUE
5

SFD-10-01-F212

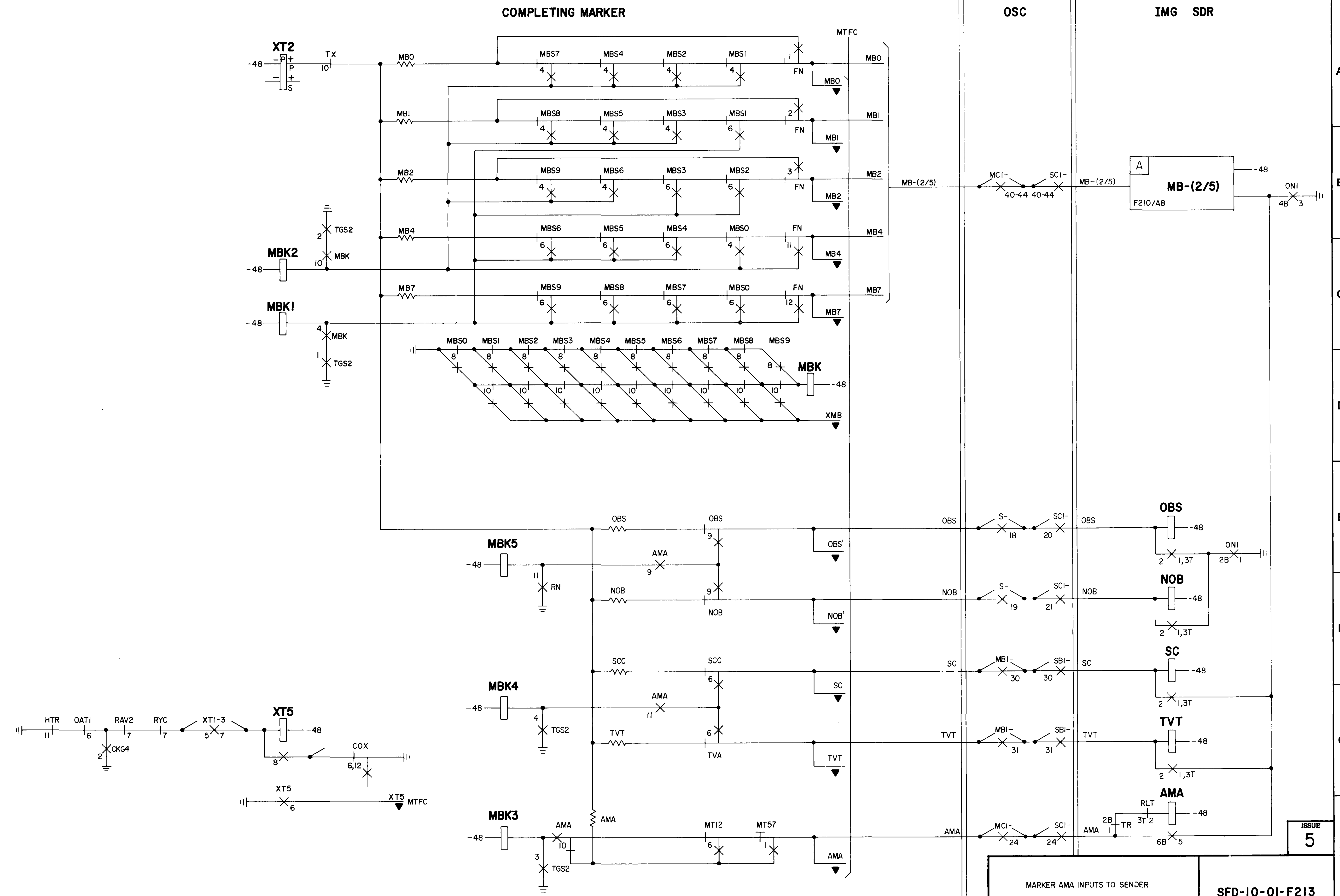
MARKER AMA INPUTS TO SENDER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-F212



ISSUE

5

MARKER AMA INPUTS TO SENDER

SFD-10-01-F213

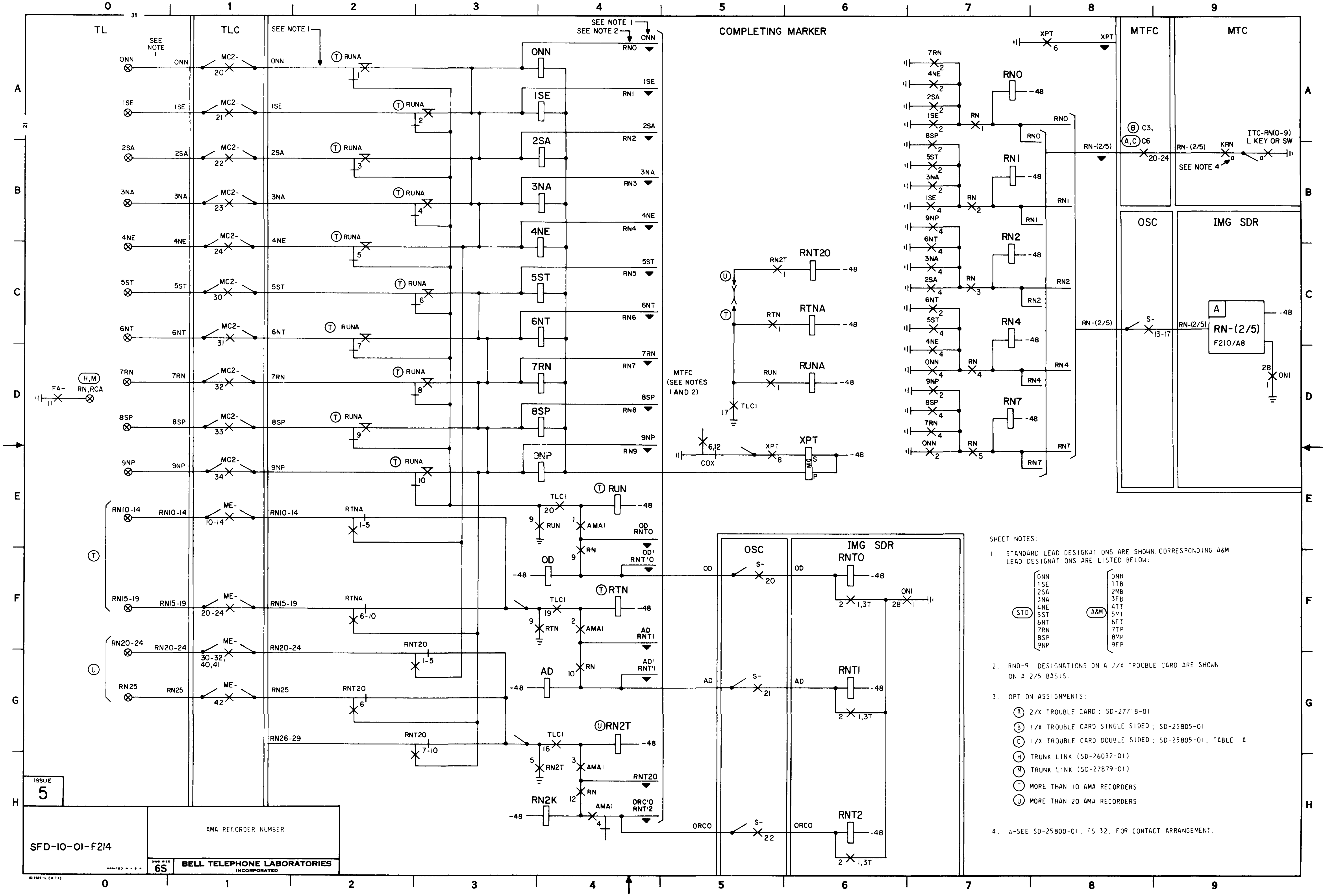
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U.S.A.

SFD-10-01-F213

E-7421 (10-71)



SHEET NOTES:

1. STANDARD LEAD DESIGNATIONS ARE SHOWN. CORRESPONDING A&M LEAD DESIGNATIONS ARE LISTED BELOW:

STD	A&M
ONN	ONN
1SE	1TB
2SA	2MB
3NA	3FB
4NE	4TT
5ST	5MT
6NT	6FT
7RN	7TP
8SP	8MP
9NP	9FP

2. RN0-9 DESIGNATIONS ON A 2/X TROUBLE CARD ARE SHOWN ON A 2/5 BASIS.

3. OPTION ASSIGNMENTS:

   Ⓐ 2/X TROUBLE CARD; SD-27718-01
   Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   Ⓗ TRUNK LINK (SD-26032-01)
   Ⓜ TRUNK LINK (SD-27879-01)
   Ⓣ MORE THAN 10 AMA RECORDERS
   Ⓤ MORE THAN 20 AMA RECORDERS

4. a-SEE SD-25800-01, FS 32, FOR CONTACT ARRANGEMENT.

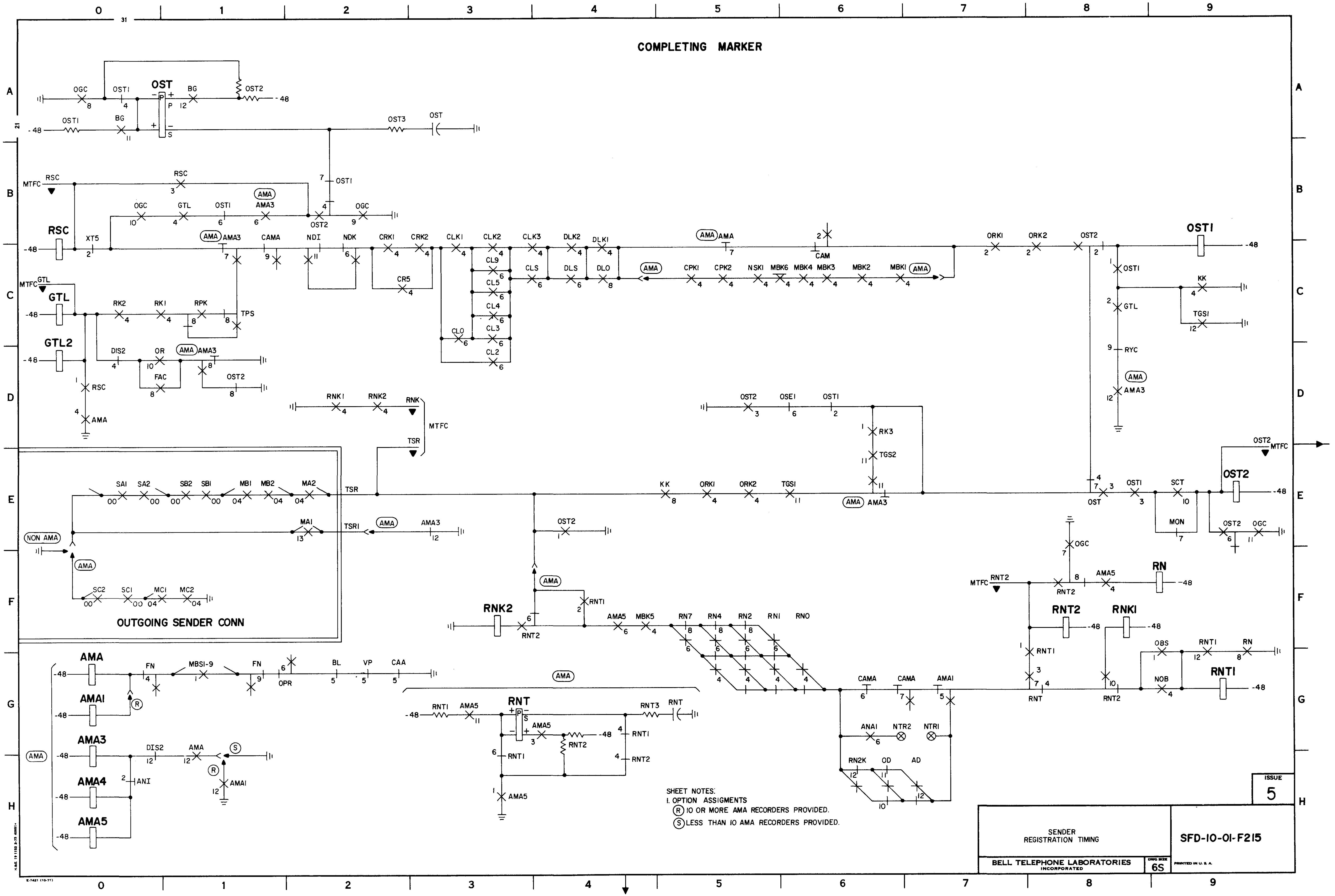
ISSUE
5

SFD-10-01-F214

AMA RECORDER NUMBER

6S
BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-F214



SHEET NOTES:
1. OPTION ASSIGMENTS
Ⓡ 10 OR MORE AMA RECORDERS PROVIDED.
Ⓢ LESS THAN 10 AMA RECORDERS PROVIDED.

SENDER
REGISTRATION TIMING

SFD-10-01-F215

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U. S. A.

E-7421 (10-71)

SFD-10-01-F215

ESTABLISHING INTERMARKER GROUP CONNECTION (SEE NOTE 1)

(SUBSCRIBER TO SUBSCRIBER)

INDEX

PAGE NO.	TITLE
F301	PART F3-CONNECTION TO TRUNK LINK, LINE LINK, AND NETWORK CONNECTION-CALLING MARKER GROUP
F302	RESERVED
F303	CONNECTION TO TRUNK LINK FRAME AND TRUNK-CALLING MARKER GROUP
F304	RESERVED
F305	CONNECTION TO LINE LINK FRAME-CALLING MARKER GROUP
F306	RESERVED
F307	NETWORK CONNECTION-CALLING MARKER GROUP

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

SHEET NOTES:

1. ON A INTERMARKER GROUP CALL THE TRUNK LINK, LINE LINK, AND NETWORK CONNECTION IN THE CALLING MARKER GROUP ARE ALMOST IDENTICAL TO THE SAME OPERATIONS PERFORMED ON AN OUTGOING CALL. THE REFERENCE INDEX ON SHEET F303, F305, OR F307 IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

ISSUE
5

PART F3
CONNECTION TO TRUNK LINK,
LINE LINK, AND NETWORK
CONNECTION-CALLING MARKER GROUP

SFD-10-01-F301

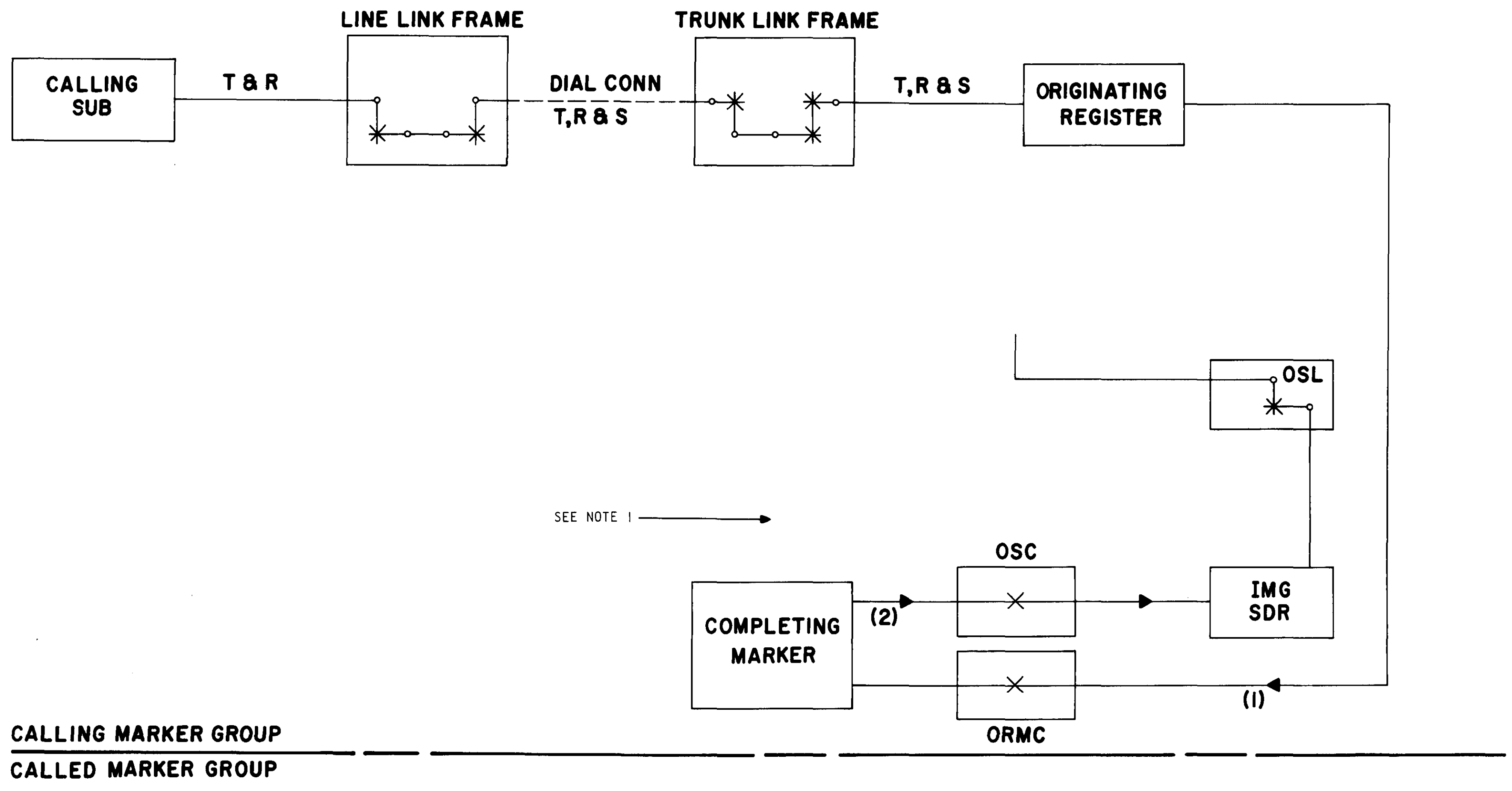
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U. S. A.

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



REFERENCE INDEX

PAGE NO.	TITLE
F303	CONNECTION TO TRUNK LINK FRAME AND TRUNK-CALLING MARKER GROUP
C302	SEQUENCE CHART TRUNK LINK FRAME SELECTION AND TRUNK SELECTION
C304	IDLE TRUNK TEST
C305	TRUNK LINK FRAME SELECTION
C306	TRUNK LINK FRAME SEIZURE
C307	TRUNK LINK FRAME MEMORY
C308	TRUNK SEIZURE
C309	TRUNK SEIZURE
C310	SENDER NO DIGIT AND TRUNK TT RELAY CONTROL
C311	OPERATION CONTROL RELAYS IN TRUNK LINK FRAME
C312	TRUNK CLASS CONTROL
C313	TRUNK CHARGING
C314	TRUNK SELECTION TIMING

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

SHEET NOTES:

1. ON A INTERMARKER GROUP CALL THE CONNECTION TO THE TRUNK LINK FRAME IN THE CALLING MARKER GROUP IS ALMOST IDENTICAL TO THE TRUNK LINK CONNECTION ON AN OUTGOING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOW DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

ISSUE
5

CONNECTION TO TRUNK LINK
FRAME AND TRUNK-CALLING
MARKER GROUP

SFD-10-01-F303

BELL TELEPHONE LABORATORIES
INCORPORATED

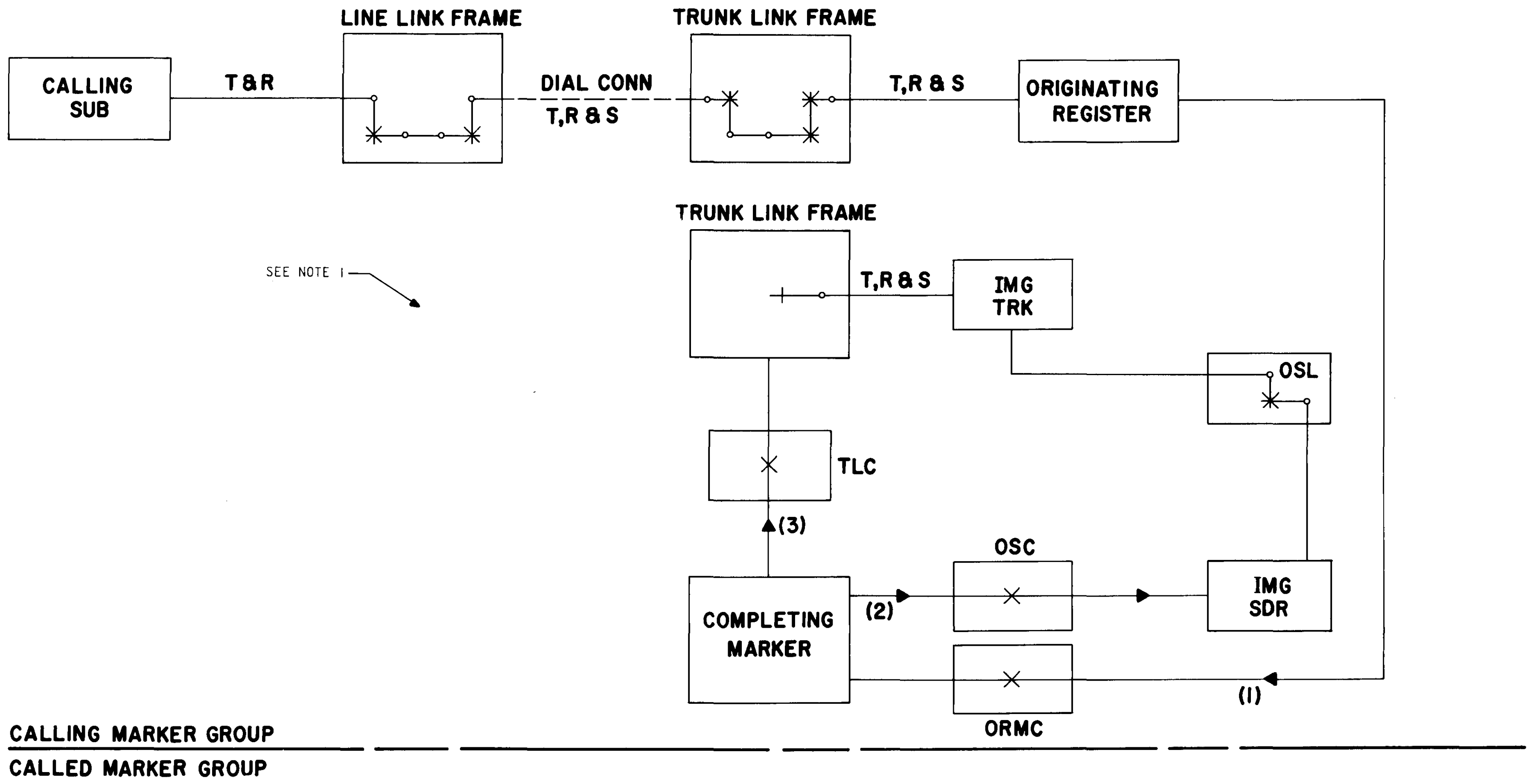
DWG SIZE 6S

PRINTED IN U. S. A.

SFD-10-01-F303
2 SHEETS, SHEET 1

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



REFERENCE INDEX

PAGE NO.	TITLE
F305	CONNECTION TO LINE LINK FRAME-CALLING MARKER GROUP
C402	SEQUENCE CHART LINE LINK FRAME SEIZURE AND CONTROL
C403	LINE LOCATION CONTROL
C404	LINE LINK FRAME SEIZURE
C405	LINE LINK FRAME SEIZURE
C406	20,30,60 CLASSES OF SERVICE INPUT TO COMPLETING MARKER
C407	100 CLASSES OF SERVICE INPUT TO COMPLETING MARKER
C408	LINE LINK FRAME LOCKOUT
C409	LINE LINK FRAME CONTROLS-NON PAIRED OPERATION
C410	PAIRED LINE LINK FRAMES-AUXILIARY LINE LINK FRAME SEIZURE
C411	PAIRED LINE LINK FRAMES-AUXILIARY LINK LINK CONTROL

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL THE CONNECTION TO THE LINE LINK FRAME IN THE CALLING MARKER GROUP IS ALMOST IDENTICAL TO THE LINE LINK CONNECTION ON AN OUTGOING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOW DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE 5

CONNECTION TO LINE LINK FRAME-
CALLING MARKER GROUP

SFD-10-01-F305

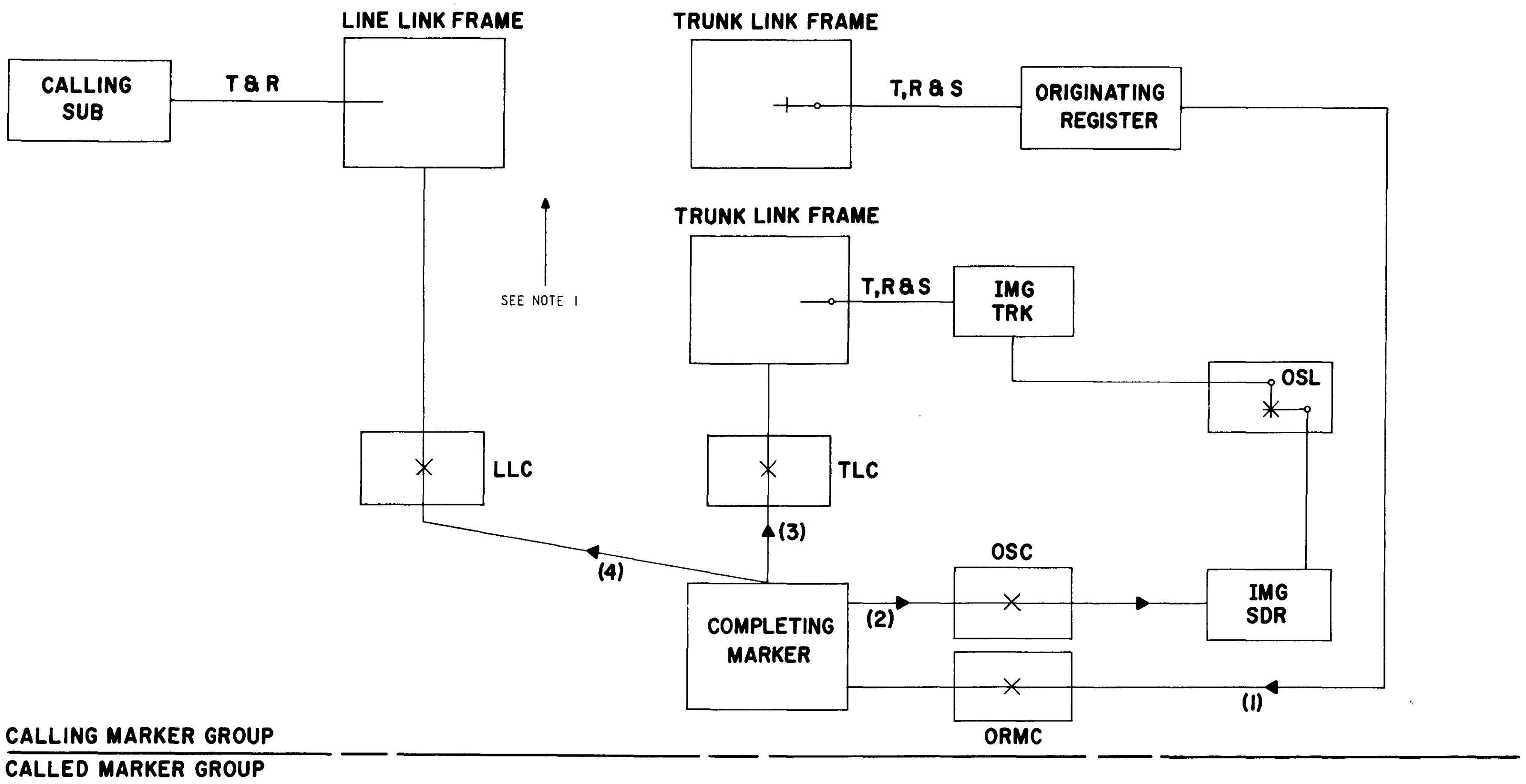
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



REFERENCE INDEX

PAGE NO.	TITLE
F307	NETWORK CONNECTION-CALLING MARKER GROUP
C502	SEQUENCE CHART PREPARATION FOR CHANNEL TEST
C503	SEQUENCE CHART CHANNEL SELECTION AND HOLD MAGNET OPERATION
C504	JUNCTOR PATTERN UNITS CONTROL
C505	JUNCTOR PATTERN TENS CONTROL
C506	SEQUENCE CHART JUNCTOR SEQUENCE CONTROL
C507	JUNCTOR SEQUENCE CONTROL
C508	JUNCTOR SUBGROUP SELECTION FOR 2,2-3,5 AND 10 TLF SIZES
C509	JUNCTOR SUBGROUP SELECTION FOR 3,4,6,7,8,9 TLF SIZES
C510	JUNCTOR SUBGROUP CONNECTOR RELAYS
C512	FLOW CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
C513	SEQUENCE CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
C514	SEQUENCE CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
C515	SEQUENCE CHART JUNCTOR RETEST, RECYCLE, AND ROUTE ADVANCE
C516	RECYCLE AND ROUTE ADVANCE CONTROL
C517	RECYCLE AND ROUTE ADVANCE
C519	GROUND SUPPLY AND ROUTE ADVANCE
C520	RIGHT OR LEFT, REGULAR, EXTENSION, OR SECOND EXTENSION TRUNK LINK FRAME
C521	JUNCTOR CONNECT RELAYS
C522	COMPLETING MARKER CHANNEL TEST CONTROL
C523	SEQUENCE CHART CONTROL OF CHANNEL SELECTION BY MASTER TEST CONTROL
C524	COMPLETING MARKER CHANNEL TEST AND SELECTION
C525	COMPLETING MARKER CHANNEL TEST AND SELECTION AND FAILURE TO MATCH
C526	LINE LINK FRAME SELECT MAGNET OPERATION
C527	TRUNK LINK FRAME SELECT MAGNET OPERATION (SD-26032-01)
C528	TRUNK LINK FRAME SELECT AND HOLD MAGNET OPERATION (SD-27879-01)
C529	HOLD MAGNET OPERATION
C530	HOLD MAGNET TIMING AND CONTROL
C531	HOLD MAGNET TIMING AND CONTROL
C532	HOLD MAGNET SIMULATION AND CONTROL BY MASTER TEST CONTROL ON ORIG, SDR, MISC, OGT, IAO, AND ITDO CLASSES OF TEST
C533	LINKAGE CHECK AND HOLD MAGNET OPERATION
C534	OPTIONAL ARRANGEMENTS FOR HOLD MAGNET OPERATION
C535	COMPLETING MARKER-CONTINUITY AND FALSE CROSS AND GROUND TESTS
C537	NO TEST CONNECTOR

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL THE NETWORK CONNECTION IN THE CALLING MARKER GROUP IS ALMOST IDENTICAL TO THE NETWORK CONNECTION ON AN OUTGOING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOW DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

SFD-10-01-F307
2 SHEETS, SHEET 1

ISSUE 5

NETWORK CONNECTION-
CALLING MARKER GROUP

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SFD-10-01-F307

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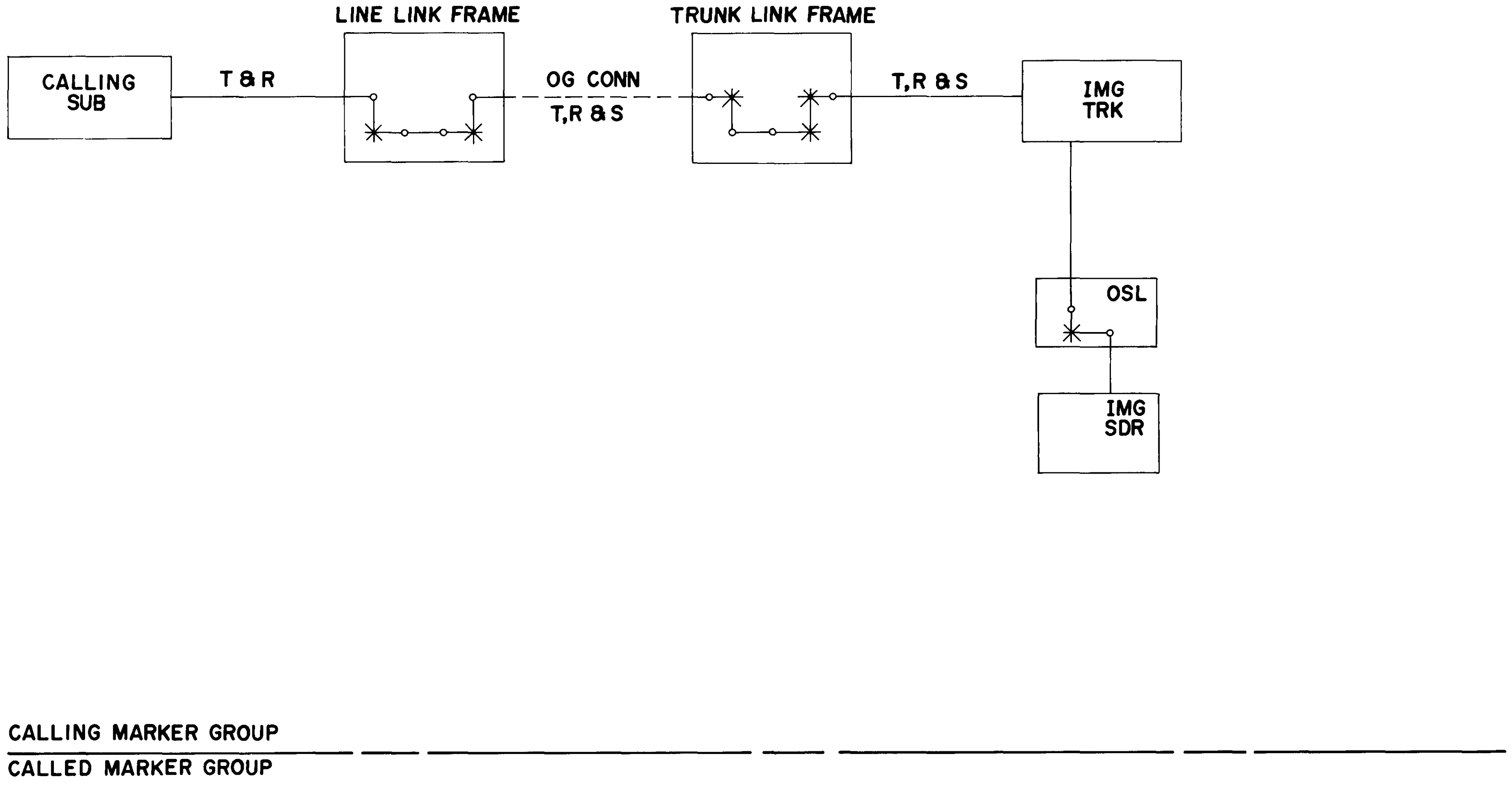
E-7481 (10-71)

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



INDEX

PAGE NO.	TITLE
F401	PART F4-CALLING COMPLETING MARKER RELEASE, INTERMARKER GROUP SENDER STORAGE AND CONTROL
F402	SEQUENCE CHART CALLING COMPLETING MARKER RELEASE
F403	SEQUENCE CHART CALLING COMPLETING MARKER RELEASE
F404	CALLING COMPLETING MARKER RELEASE
F405	CALLING COMPLETING MARKER RELEASE
F406	SEQUENCE CHART MARKER ACTION FROM FAILURES- CALLING MARKER GROUP
F407	COMPLETING MARKER TROUBLE RECORD CONTROL
F408	RESERVED
F409	SEQUENCE CHART INTERMARKER GROUP SENDER SUBSCRIBER TO SUBSCRIBER
F410	INTERMARKER GROUP SENDER CALLED DIGIT REGISTRATION AND INPUT TO CALLED COMPLETING MARKER
F411	INTERMARKER GROUP SENDER CONTROL
F412	RESERVED
F413	INTERMARKER GROUP SENDER TIMING
F414	TRUNK LINK IDENTIFICATION 20 TLF-CALLED MARKER GROUP
F415	TRUNK LINK IDENTIFICATION 30 TLF-CALLED MARKER GROUP
F416	ESTABLISHING INTERMARKER GROUP CONNECTION-CALLING MARKER GROUP
F417	ESTABLISHING INTERMARKER GROUP CONNECTION-CALLED MARKER GROUP

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE
5

PART F4
CALLING COMPLETING MARKER
RELEASE, INTERMARKER GROUP
SENDER STORAGE AND CONTROL

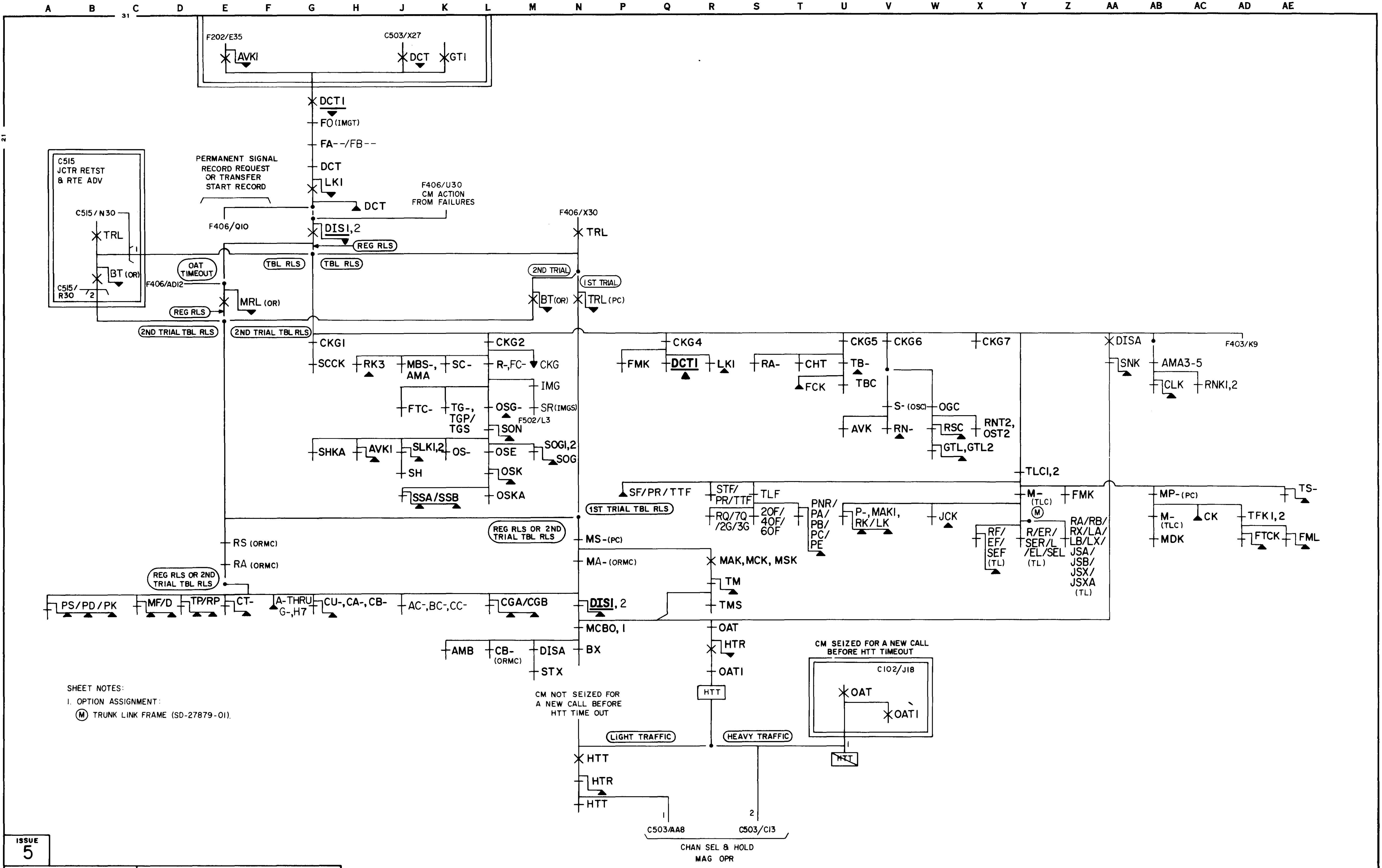
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-F401

E-7421 (10-71)



SHEET NOTES:

1. OPTION ASSIGNMENT:

Ⓜ TRUNK LINK FRAME (SD-27879-01).

ISSUE
5

SFD-10-01-F402

SEQUENCE CHART
CALLING COMPLETING MARKER RELEASE

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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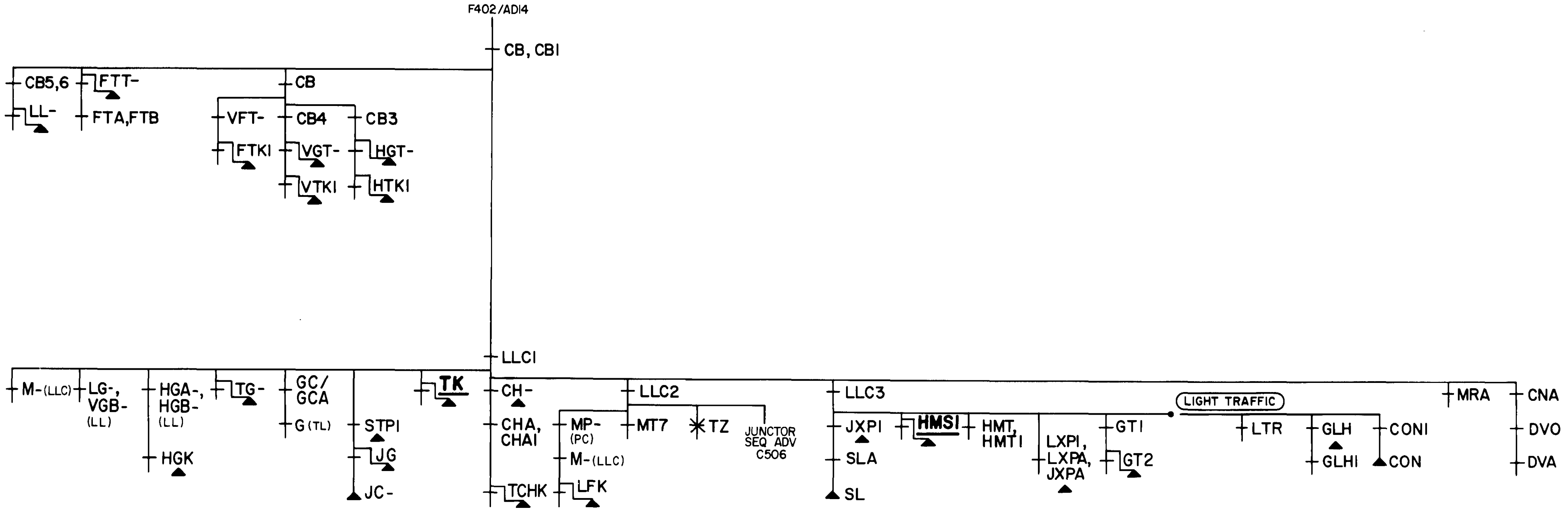
SFD-10-01-F402



ISSUE
5

SEQUENCE CHART
CALLING COMPLETING MARKER RELEASE

SFD-10-01-F403

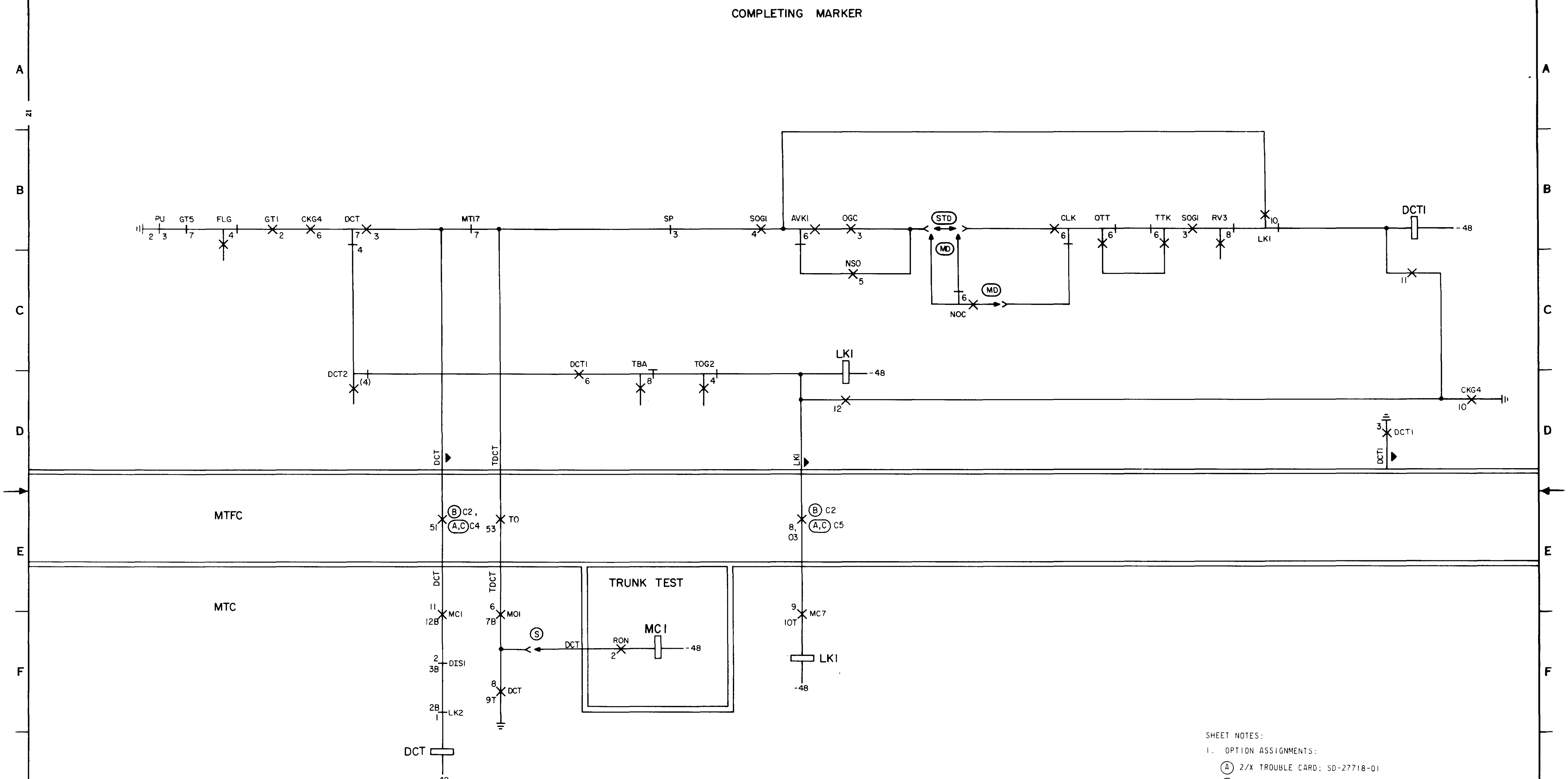
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U.S.A.

E-7421-B (10-71)

SFD-10-01-F403



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓢ AUTOMATIC RECYCLE OF TRUNK TEST

ISSUE
5

SFD-10-01-F404

CALLING COMPLETING MARKER RELEASE

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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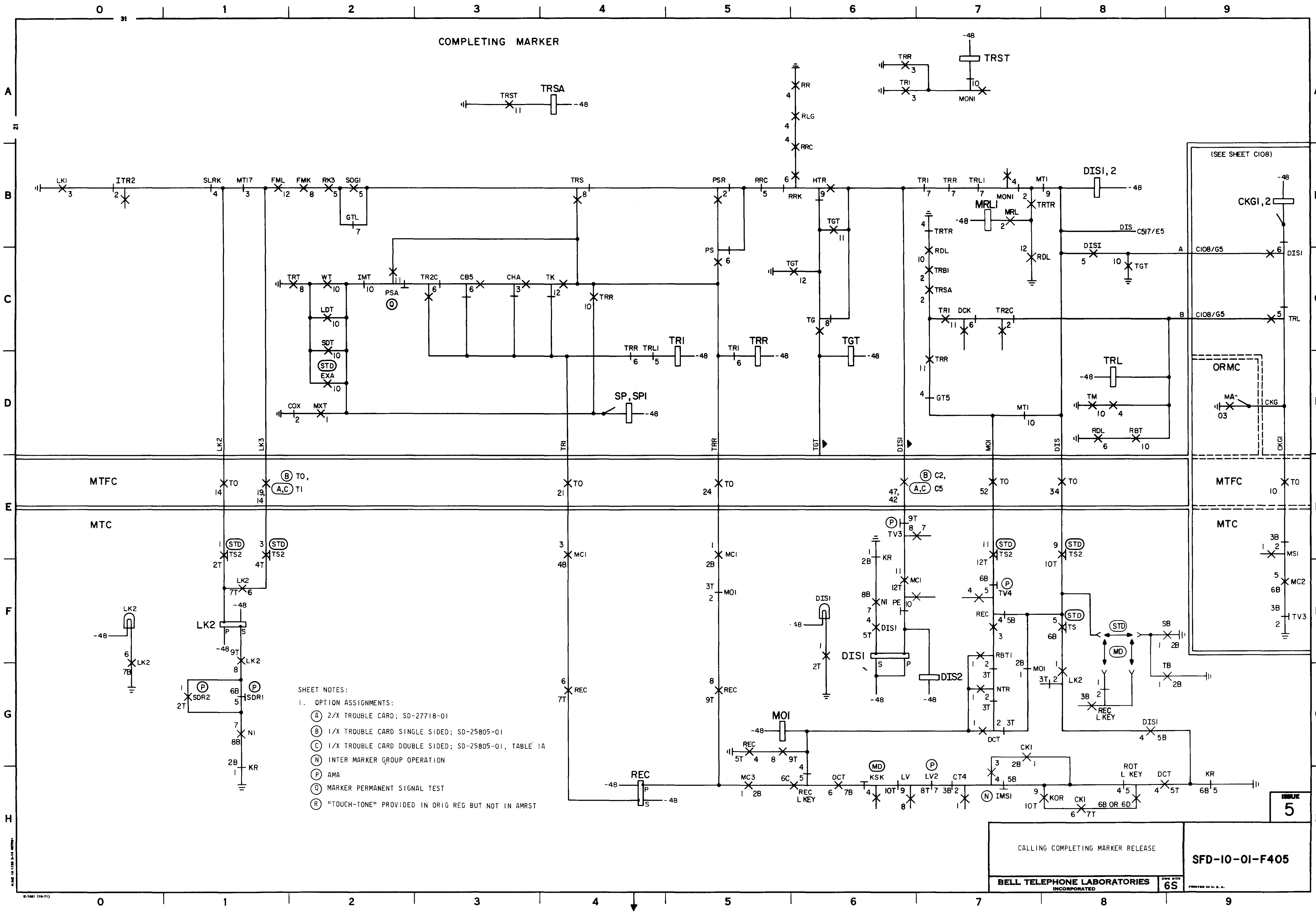

SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
   - Ⓝ INTER MARKER GROUP OPERATION
   - Ⓟ AMA
   - Ⓠ MARKER PERMANENT SIGNAL TEST
   - Ⓡ "TOUCH-TONE" PROVIDED IN ORIG REG BUT NOT IN AMRST

ISSUE 5

CALLING COMPLETING MARKER RELEASE

SFD-10-01-F405

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

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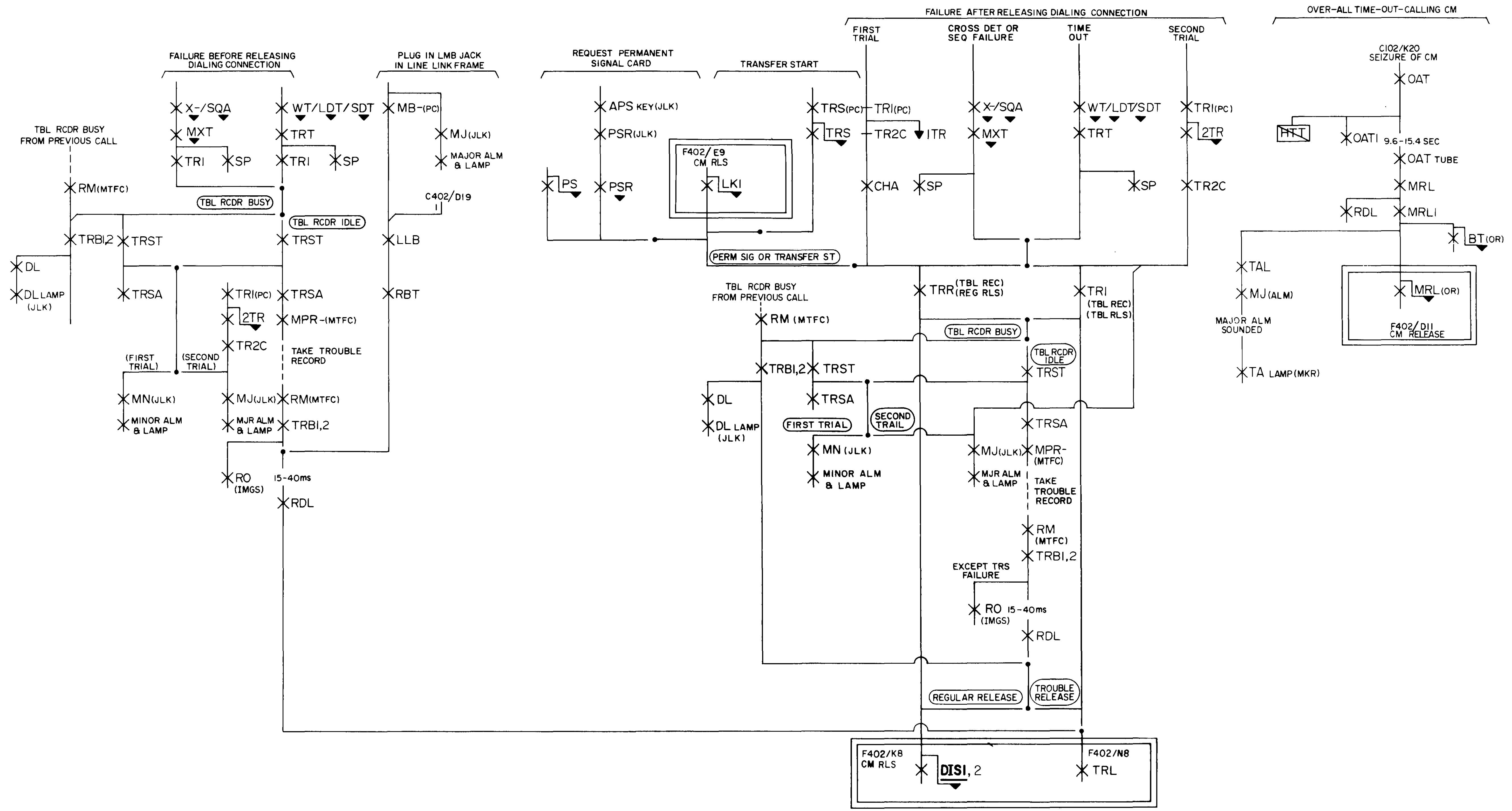
SFD-10-01-F405



ISSUE
5

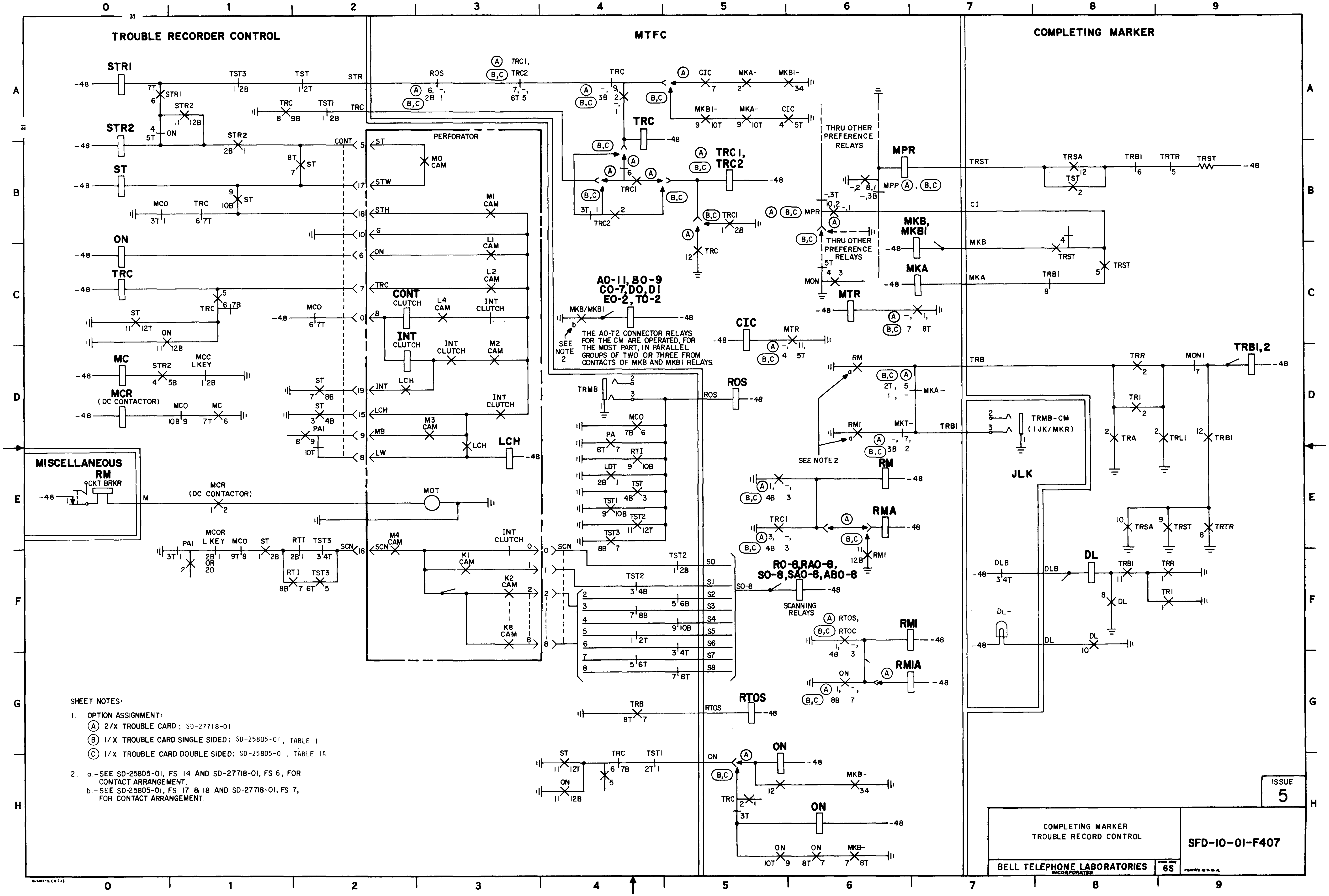
SFD-10-01-F406

SEQUENCE CHART
MARKER ACTION FROM FAILURES-
CALLING MARKER GROUP

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-F406



SHEET NOTES:

1. OPTION ASSIGNMENT:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

2. a.-SEE SD-25805-01, FS 14 AND SD-27718-01, FS 6, FOR CONTACT ARRANGEMENT.
   b.-SEE SD-25805-01, FS 17 & 18 AND SD-27718-01, FS 7, FOR CONTACT ARRANGEMENT.

ISSUE 5

COMPLETING MARKER
TROUBLE RECORD CONTROL

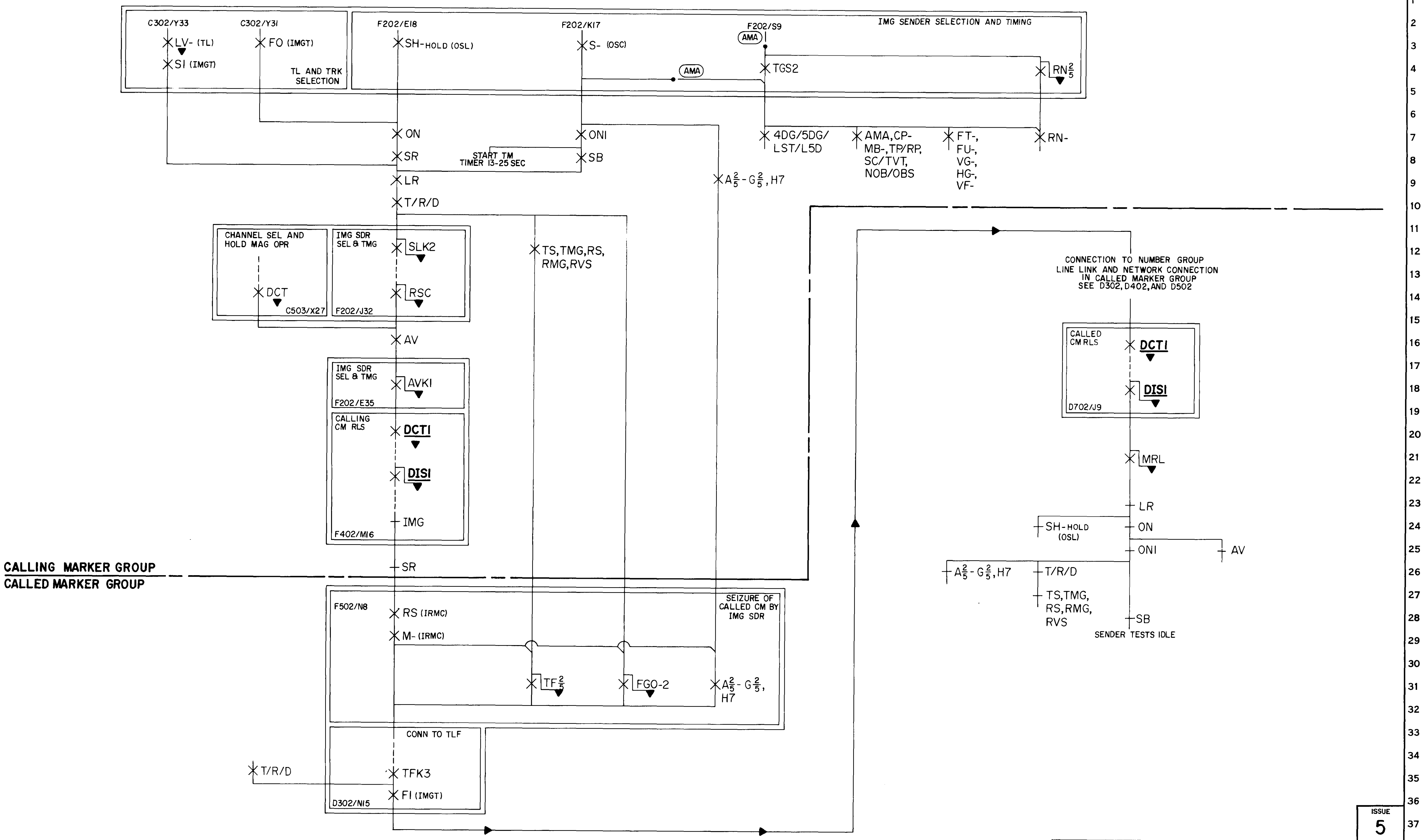
SFD-10-01-F407

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SFD-10-01-F407

INTERMARKER GROUP SENDER (SUBSCRIBER TO SUBSCRIBER)



ISSUE
5

SEQUENCE CHART
INTERMARKER GROUP SENDER
SUBSCRIBER TO SUBSCRIBER

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

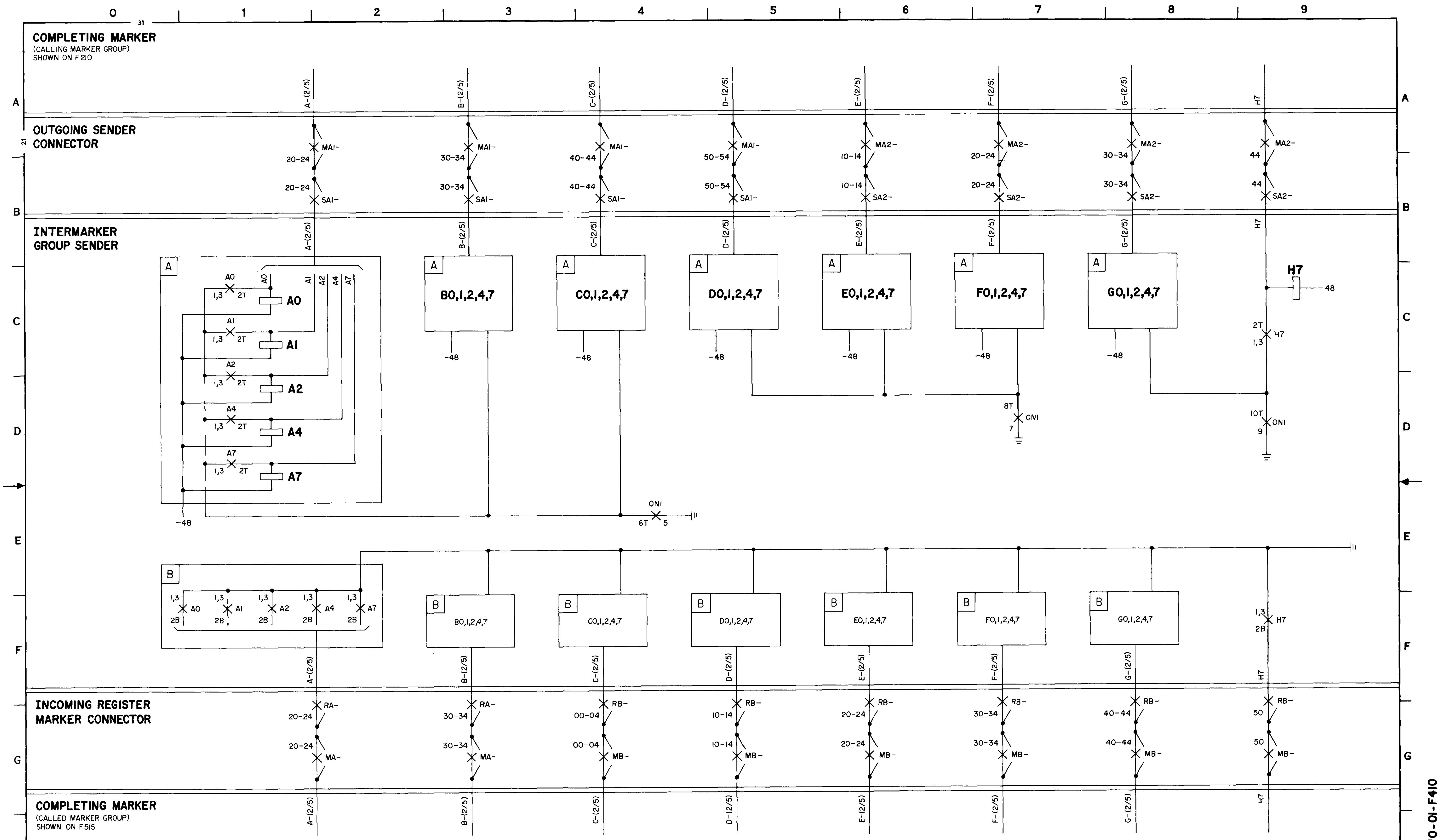
PRINTED IN U.S.A.

SFD-10-01-F409

E-7421-B (10-71)

BRUNING 44.131 24092

SFD-10-01-F409



ISSUE
5

SFD-10-01-F410

INTERMARKER GROUP SENDER
CALLED DIGIT REGISTRATION
AND INPUT TO CALLED
COMPLETING MARKER

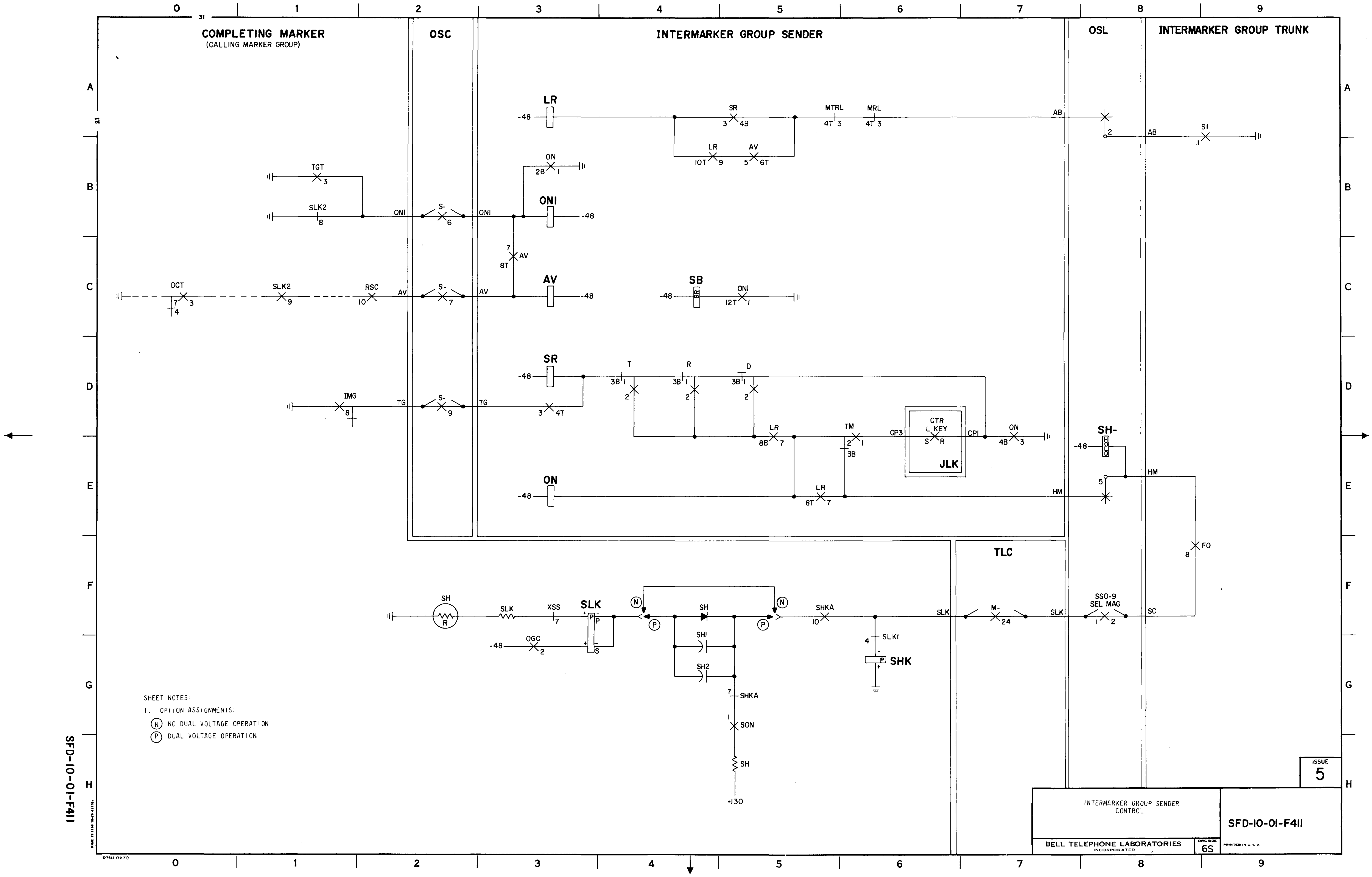
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

E-7481-L (4-73)

SFD-10-01-F410



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓝ NO DUAL VOLTAGE OPERATION

Ⓟ DUAL VOLTAGE OPERATION

ISSUE 5

INTERMARKER GROUP SENDER
CONTROL

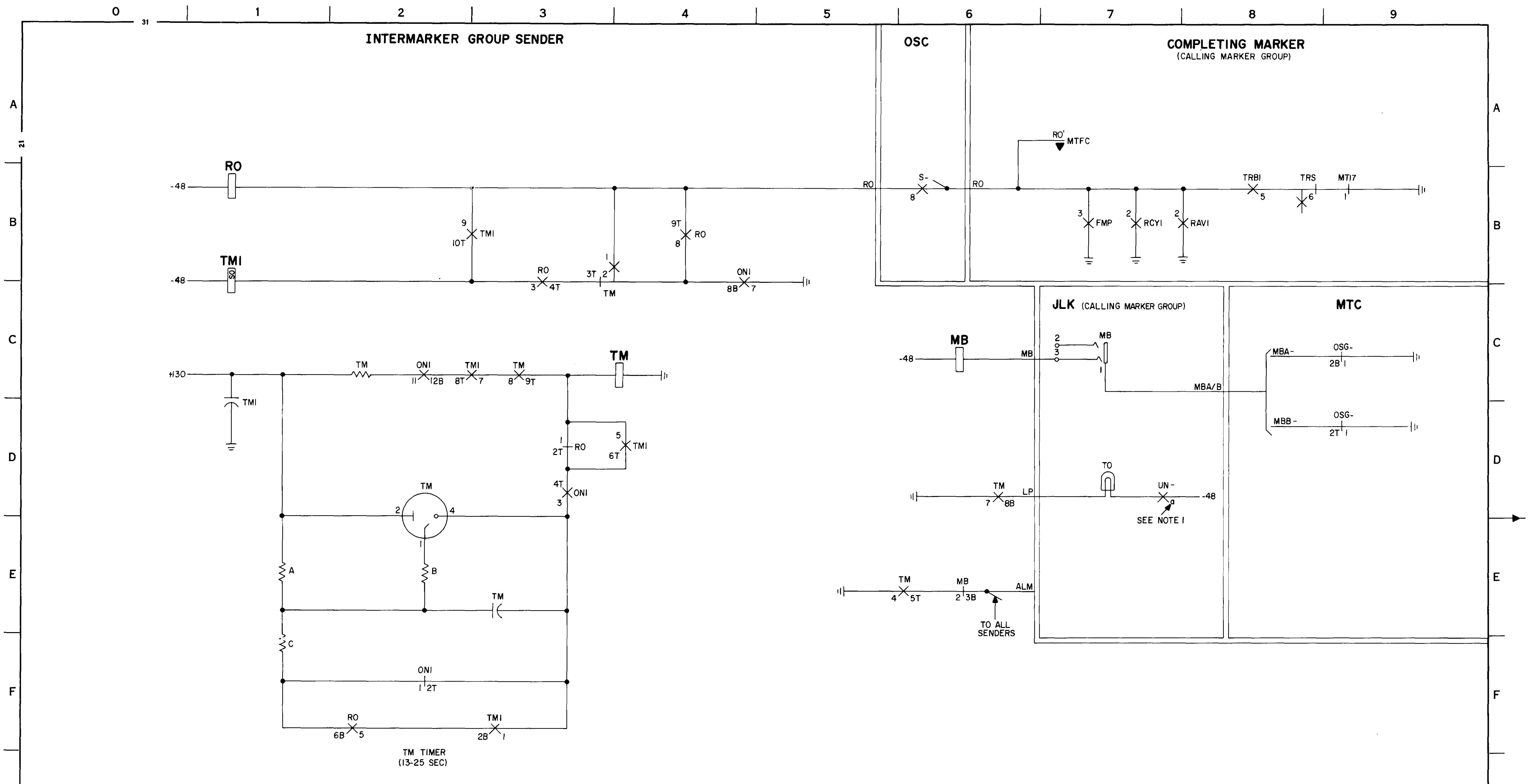
SFD-10-01-F411

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-F411



SHEET NOTES:
1. a - SEE SD-25762-01, FS5 FOR CONTACT ARRANGEMENT

ISSUE
5

INTERMARKER GROUP
SENDER TIMING

SFD-10-01-F413

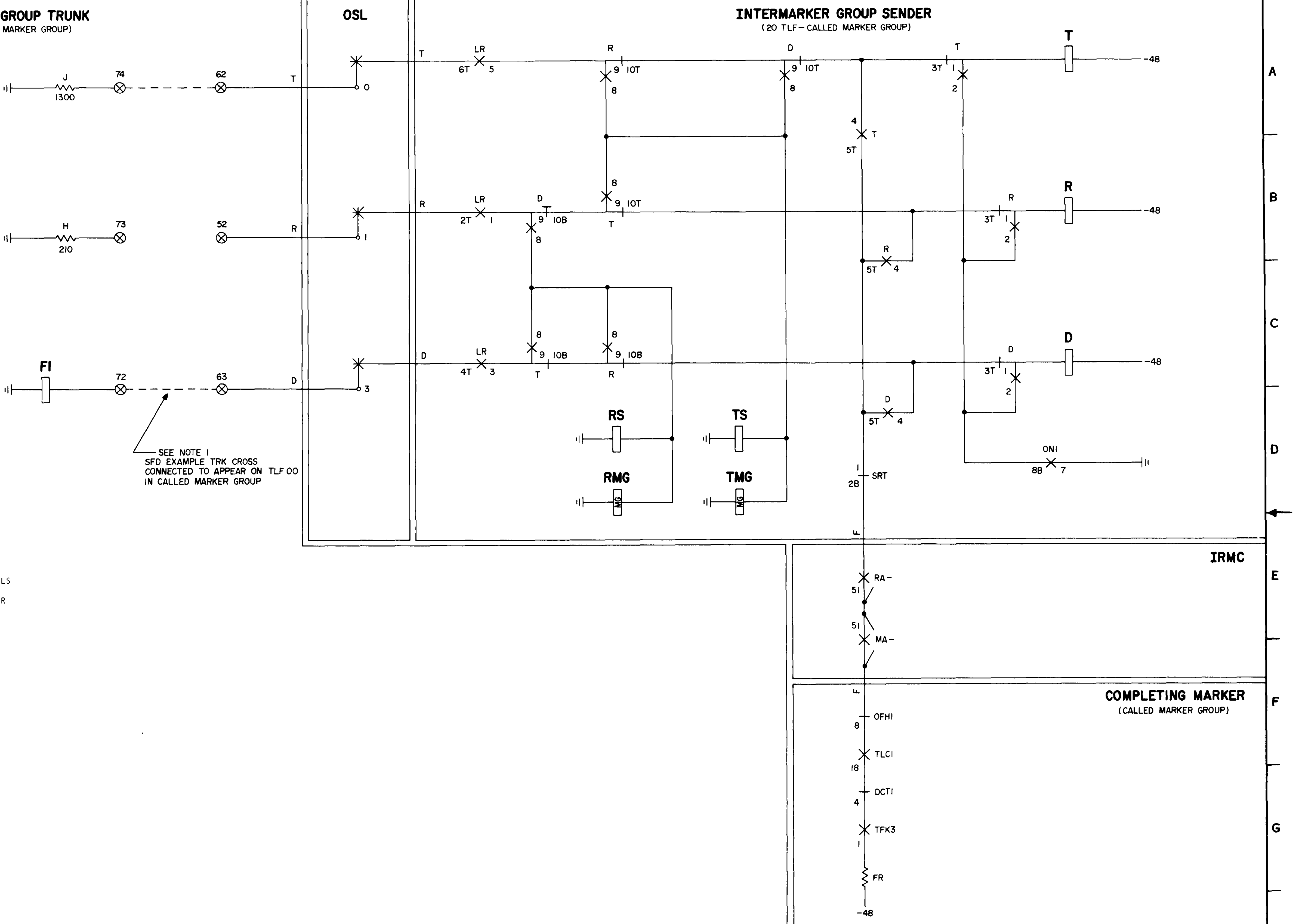
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U.S.A.

SFD-10-01-F413

E-7421 (10-71)



SHEET NOTES:

1. CROSS CONNECT TERMINALS 52,62,AND 63 TO TERMINALS 72,73, AND 74 ACCORDING TO TRUNK LINK FRAME ON WHICH THE IMG TRUNK APPEARS IN THE CALLED MARKER GROUP AS FOLLOWS: SD-26141-01

TRK LINK FRAME	TERMINALS		
	72	73	74
00	63		62
01	63		52
02	62	52	63
03	62		63
04	62	52	
05	62		
06	62		52
07	63		
08	62	63	
09	62	63	52
10	63	52	62
11	63	62	52
12	52	62	63
13	52		63
14	52	62	
15	52		
16	52		62
17	63	52	
18	52	63	
19	52	63	62

ISSUE
5

SFD-10-01-F414

TRUNK LINK IDENTIFICATION
20 TLF-CALLED
MARKER GROUP

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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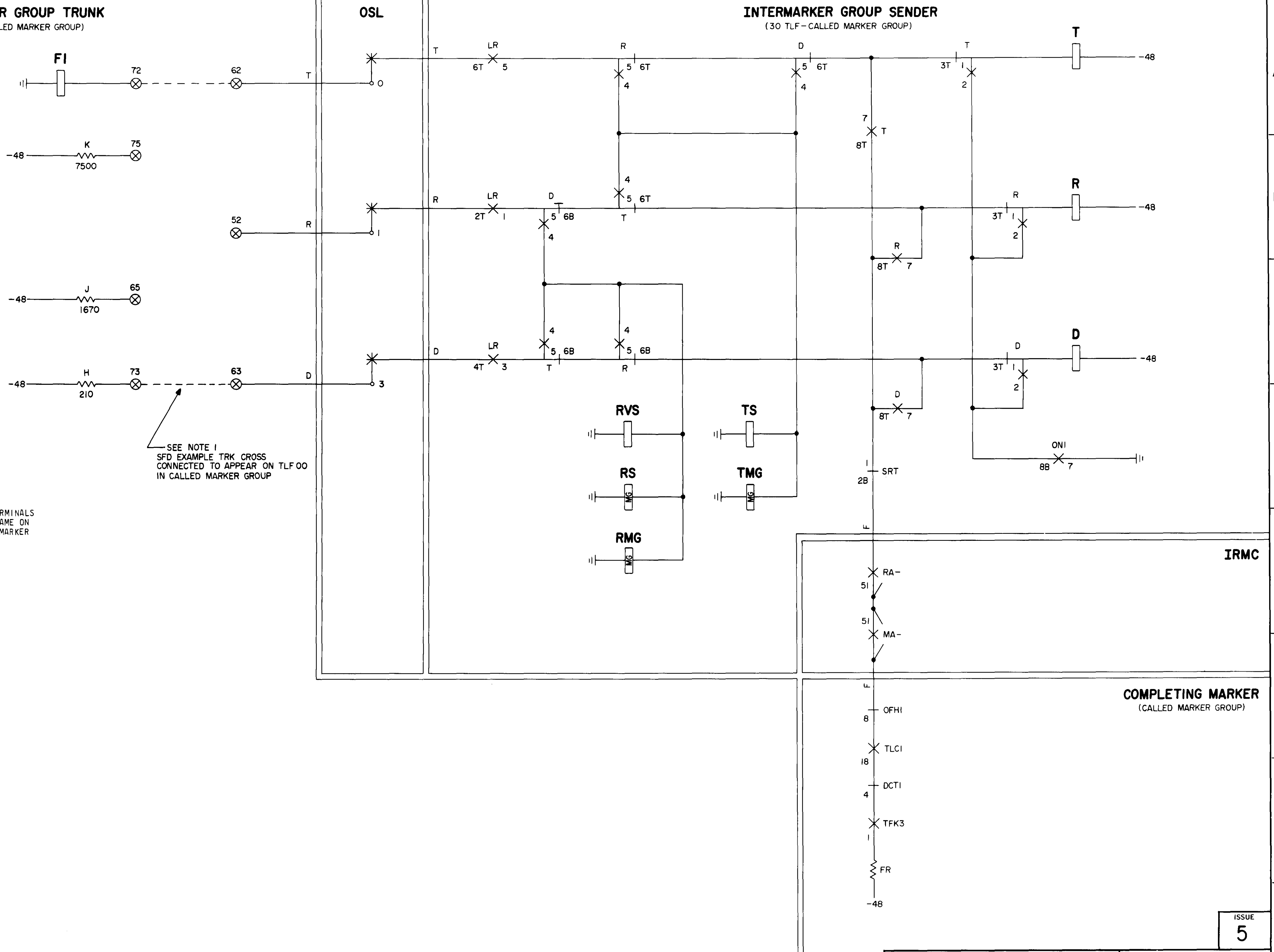


SHEET NOTES:

1. CROSS CONNECT TERMINALS 52,62, AND 63 TO TERMINALS 65,72,73, AND 75 ACCORDING TO TRUNK LINK FRAME ON WHICH THE IMG TRUNK APPEARS IN THE CALLED MARKER GROUP AS FOLLOWS: SD-26141-01

TRK LINK FRAME	TERMINALS			
	65	72	73	75
00		62	63	
01		62	52	63
02	52	62		63
03		62		
04	52	62	63	
05		62	52	
06	52	62		
07	63	62	52	
08	63	62		
09		62		63
10		52	63	
11		52	62	63
12	62	52		63
13		52		
14	62	52	63	
15		52	62	
16	62	52		
17	63	52	62	
18	63	52		
19		52		63
20		63	52	
21		63	62	52
22	62	63		52
23		63		
24	62	63	52	
25		63	62	
26	62	63		
27	52	63	62	
28	52	63		
29		63		52

ISSUE
5

TRUNK LINK IDENTIFICATION
30 TLF-CALLED MARKER
GROUP

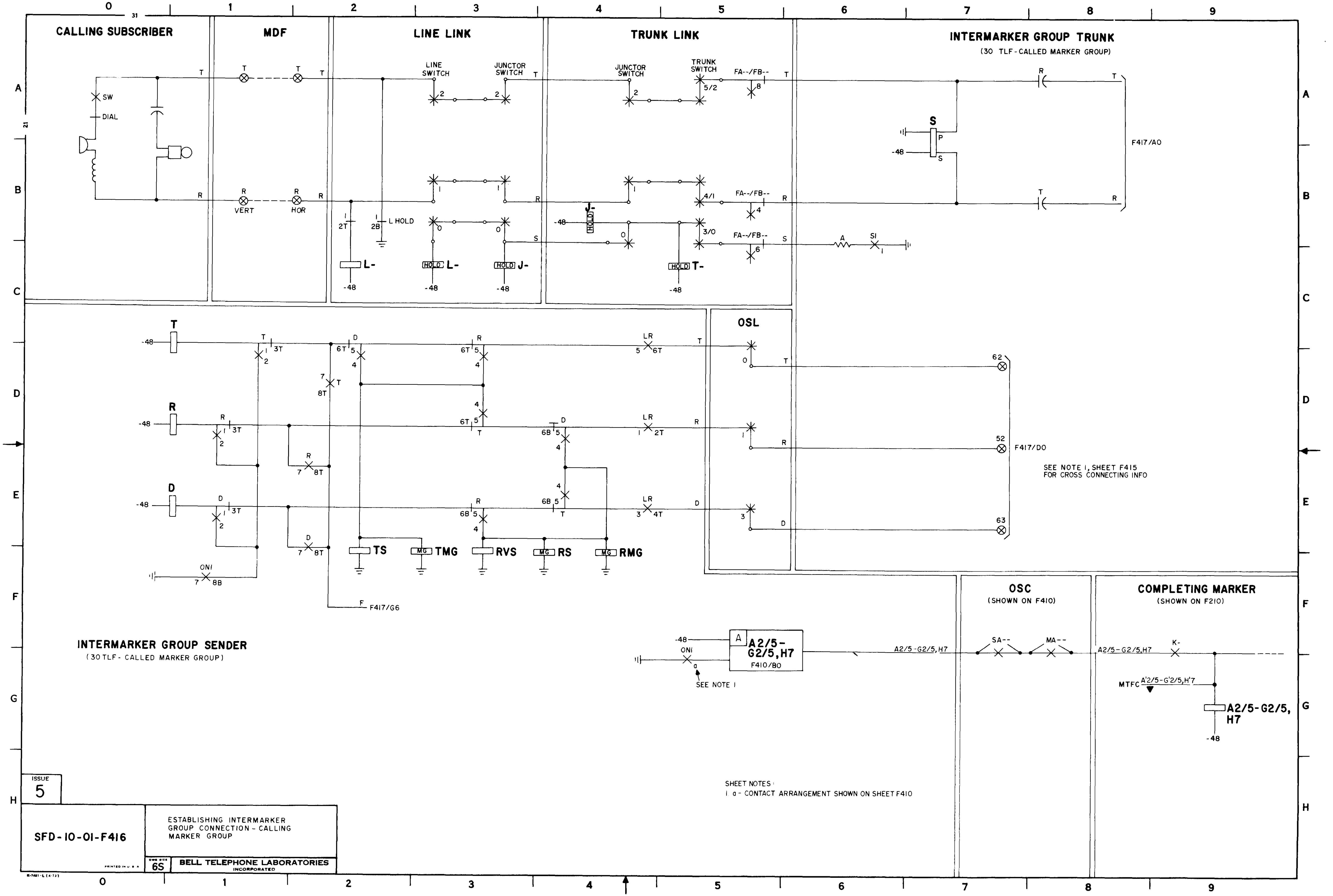
SFD-10-01-F415

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-F415



SHEET NOTES:
1 a - CONTACT ARRANGEMENT SHOWN ON SHEET F410

ISSUE
5

SFD-10-01-F416

ESTABLISHING INTERMARKER
GROUP CONNECTION - CALLING
MARKER GROUP

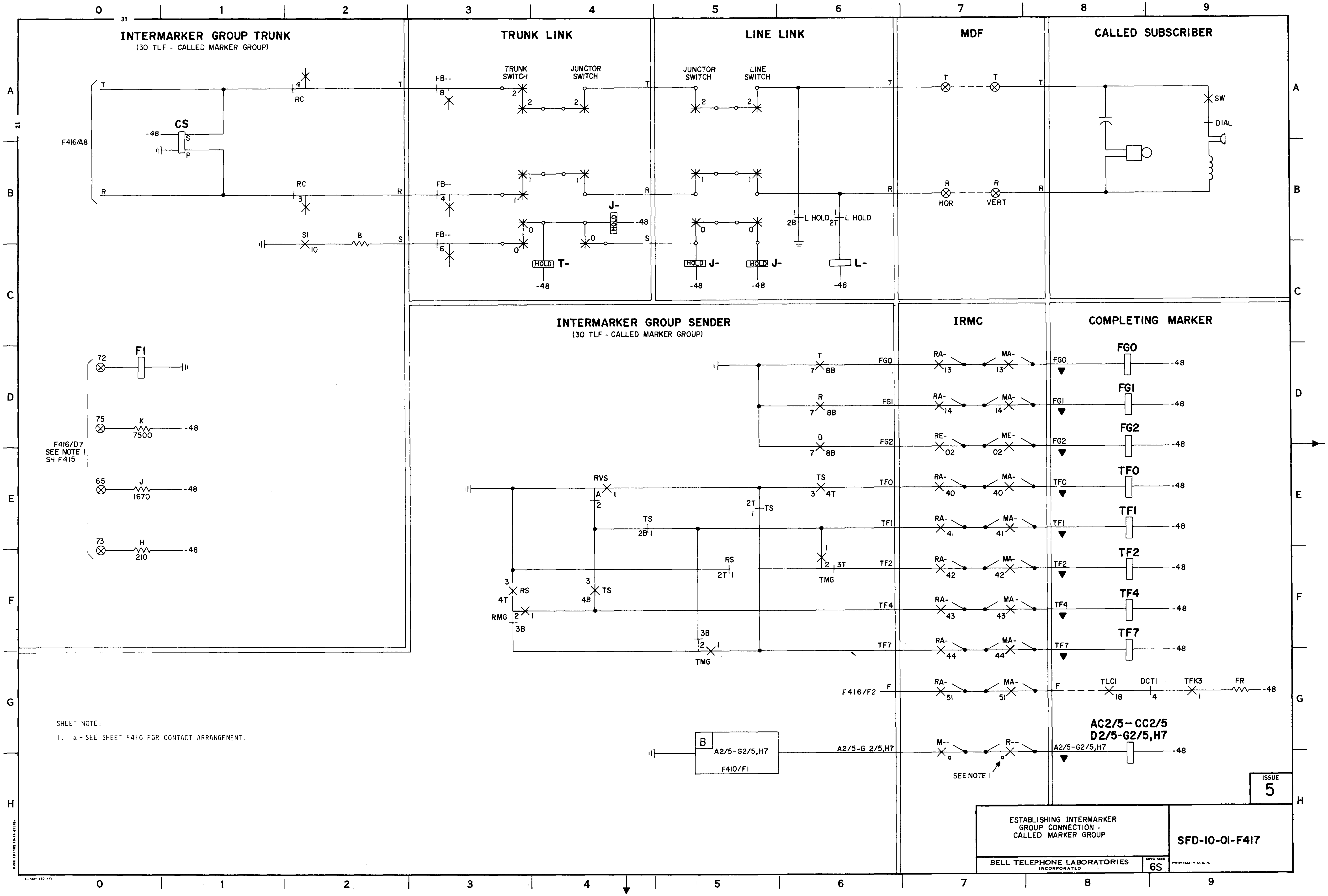
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7481-L (4-72)

SFD-10-01-F416



SHEET NOTE:

1. a - SEE SHEET F416 FOR CONTACT ARRANGEMENT.

ESTABLISHING INTERMARKER
GROUP CONNECTION -
CALLED MARKER GROUP

SFD-10-01-F417

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

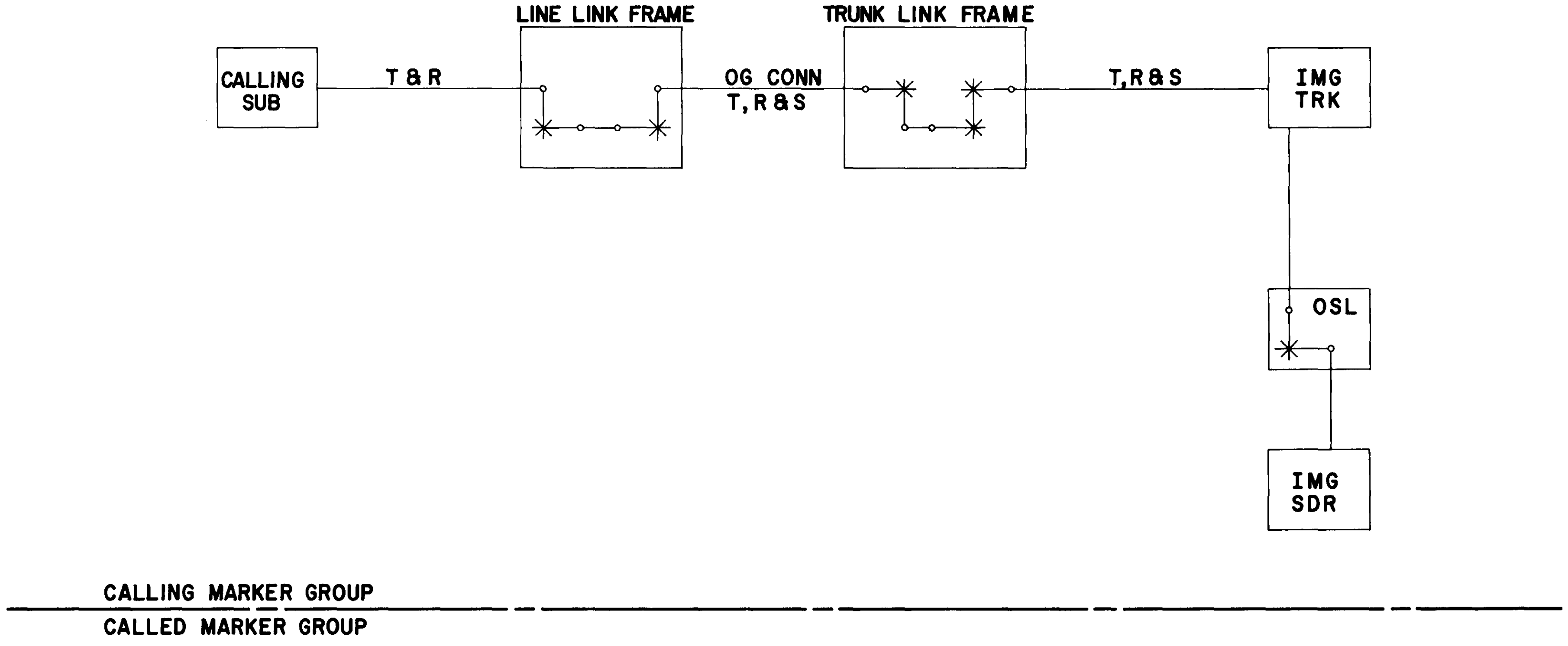
PRINTED IN U.S.A.

E-7421 (10-71)

SFD-10-01-F417

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



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F502	SEQUENCE CHART COMPLETING MARKER SEIZURE BY INTERMARKER GROUP SENDER
F503	RESERVED
F504	CALLED COMPLETING MARKER PREFERENCE AND SEIZURE
F505	CALLED COMPLETING MARKER PREFERENCE AND SEIZURE
F506	MAKE-BUSY AND INDICATING LEADS
F507	INTERMARKER GROUP SENDER AND CONNECTOR CONTROLS
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F512	TRUNK LINK FRAME IDENTIFICATION CALLED MARKER - 20 TLF CALLED MARKER GROUP
F513	TRUNK LINK FRAME IDENTIFICATION CALLED MARKER - 30 TLF CALLED MARKER GROUP
F514	NUMBER GROUP AND C DIGIT TRANSLATION
F515	CALLED NUMBER INPUT FROM IMG SENDER TO CALLED MARKER - TRANSLATION FOR NUMBER GROUP SELECTION

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE 5

PART F5
SEIZURE OF CALLED COMPLETING
MARKER BY INTERMARKER
GROUP SENDER

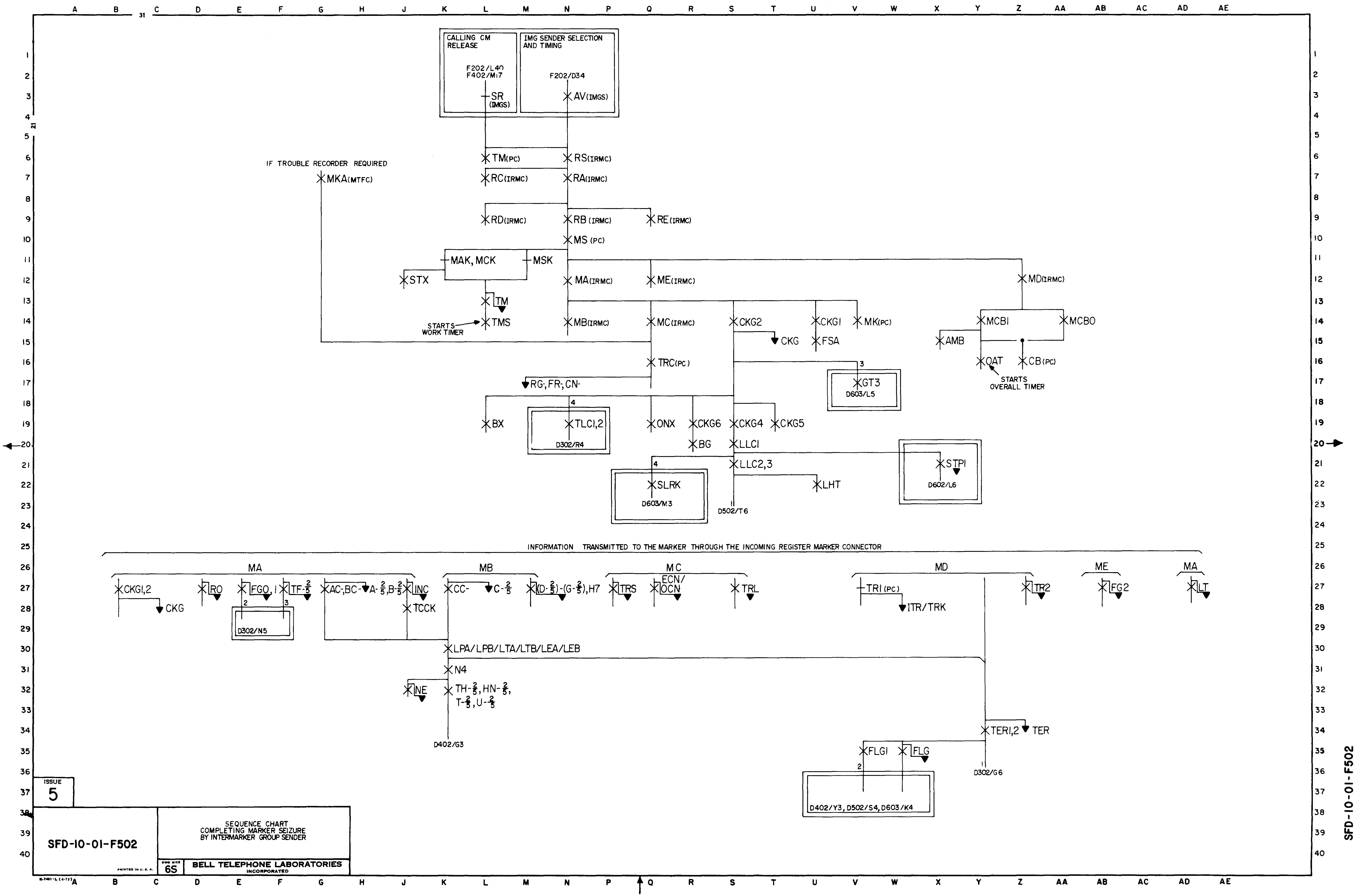
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-F501

E-7421 (10-71)



ISSUE
5

SFD-10-01-F502

SEQUENCE CHART
COMPLETING MARKER SEIZURE
BY INTERMARKER GROUP SENDER

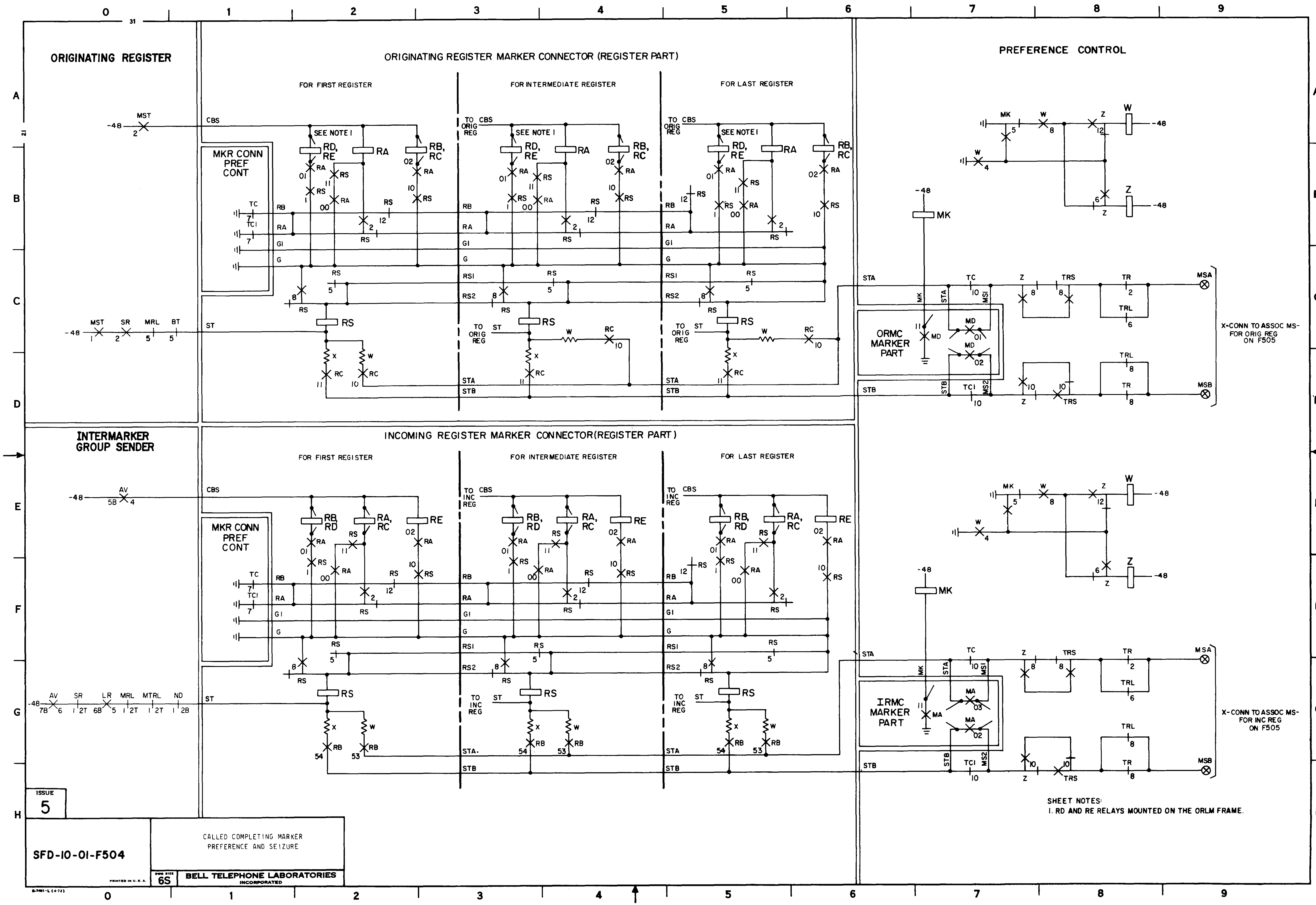
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7481-L (4-72)

SFD-10-01-F502



SHEET NOTES:
1. RD AND RE RELAYS MOUNTED ON THE ORLM FRAME.

ISSUE
5

SFD-10-01-F504

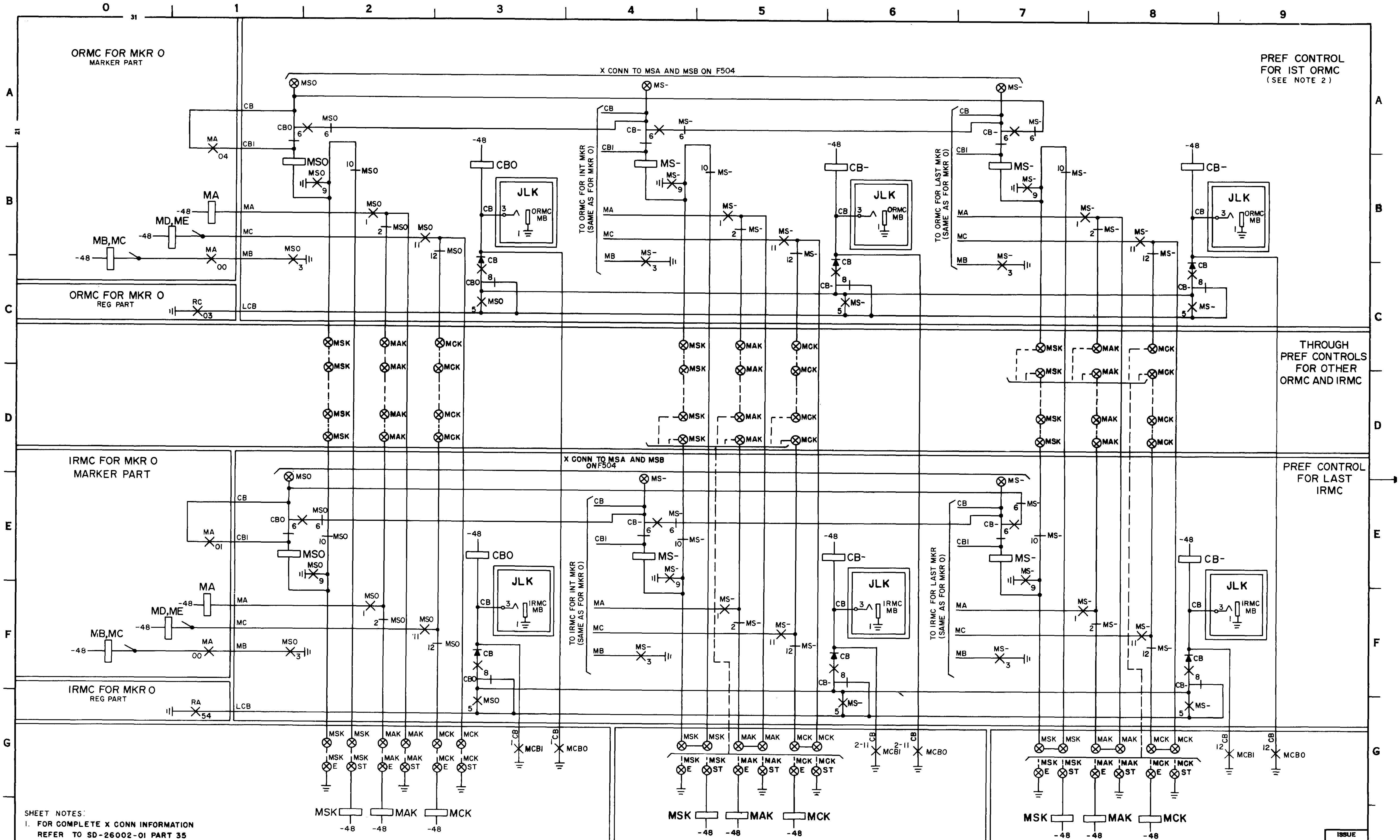
CALLED COMPLETING MARKER
PREFERENCE AND SEIZURE

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-F504


ORMC FOR MKR 0
MARKER PART
ORMC FOR MKR 0
REG PART
IRMC FOR MKR 0
MARKER PART
IRMC FOR MKR 0
REG PART
X CONN TO MSA AND MSB ON F504
X CONN TO MSA AND MSB ON F504
PREF CONTROL FOR 1ST ORMC (SEE NOTE 2)
THROUGH PREF CONTROLS FOR OTHER ORMC AND IRMC
PREF CONTROL FOR LAST IRMC
TO ORMC FOR INT MKR (SAME AS FOR MKR 0)
TO ORMC FOR LAST MKR (SAME AS FOR MKR 0)
TO IRMC FOR INT MKR (SAME AS FOR MKR 0)
TO IRMC FOR LAST MKR (SAME AS FOR MKR 0)
MSO
MS-
CB0
CB-
JLK
ORMC MB
IRMC MB
MA
MB,MC
MD,ME
CB
CB1
LCB
RC 03
RA 54
-48
MSK
MAK
MCK
MSK E
MSK ST
MAK E
MAK ST
MCK E
MCK ST
MCB1
MCB0
0
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H

COMPLETING MARKER 0

INTERMEDIATE COMPLETING MARKER

LAST COMPLETING MARKER

SHEET NOTES:

1. FOR COMPLETE X CONN INFORMATION REFER TO SD-26002-01 PART 35 SD-26029-01 NOTE 405 & 405A
2. PREF. CKT. SHOWN IS APP. FIG. 7, RATED STD. ON ISSUE 10B.

ISSUE
5

CALLED COMPLETING MARKER
PREFERENCE AND SEIZURE

SFD-10-01-F505

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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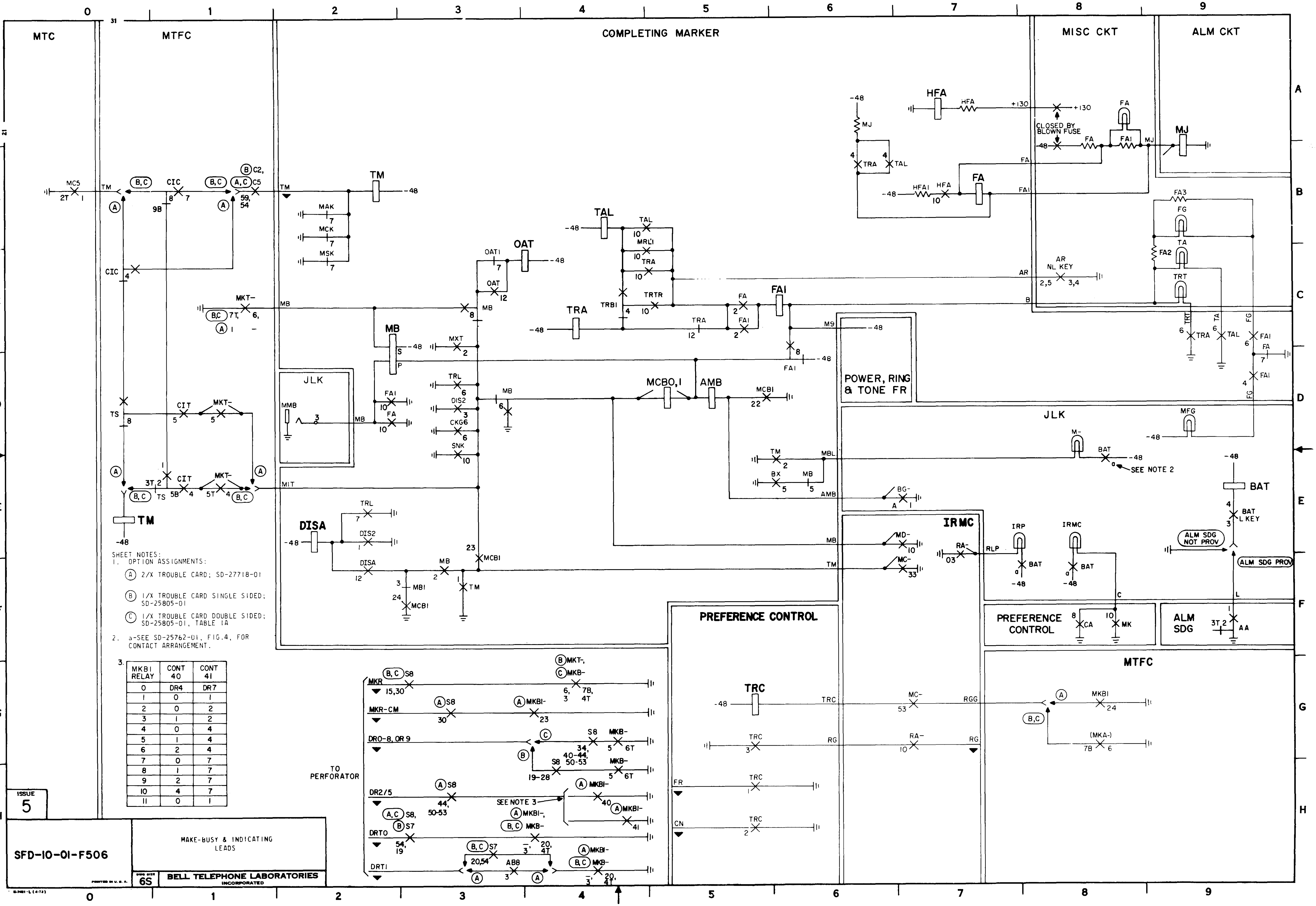
E-7481 (10-71)

SFD-10-01-F505



SHEET NOTES:
1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

2. a-SEE SD-25762-01, FIG.4, FOR CONTACT ARRANGEMENT.

3.

MKB1 RELAY	CONT 40	CONT 41
0	DR4	DR7
1	0	1
2	0	2
3	1	2
4	0	4
5	1	4
6	2	4
7	0	7
8	1	7
9	2	7
10	4	7
11	0	1

ISSUE
5

SFD-10-01-F506

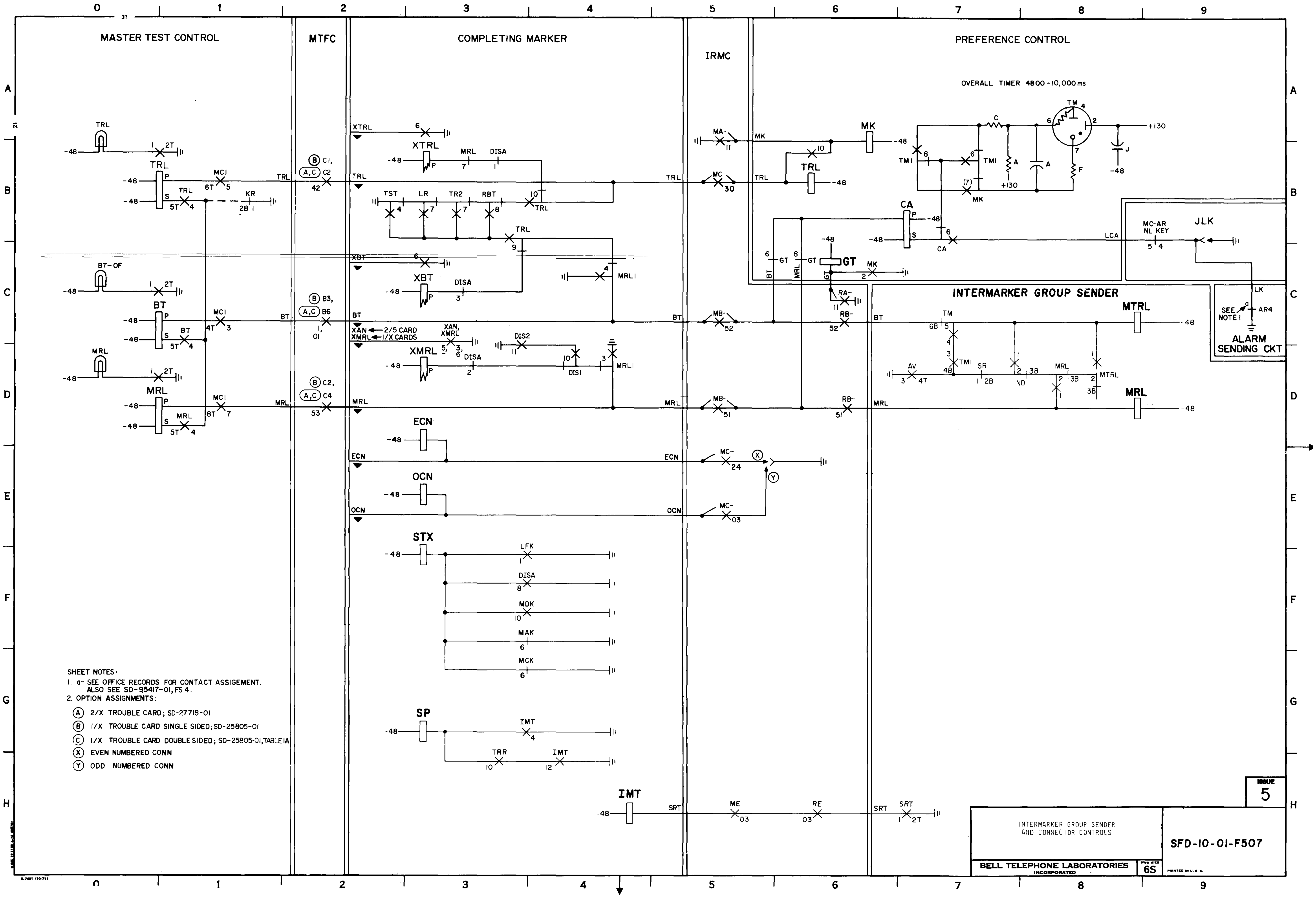
MAKE-BUSY & INDICATING
LEADS

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

SFD-10-01-F506



SHEET NOTES:
1. a- SEE OFFICE RECORDS FOR CONTACT ASSIGEMENT. ALSO SEE SD-95417-01, FS 4.
2. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA
Ⓧ EVEN NUMBERED CONN
Ⓨ ODD NUMBERED CONN

ISSUE 5

INTERMARKER GROUP SENDER
AND CONNECTOR CONTROLS

SFD-10-01-F507

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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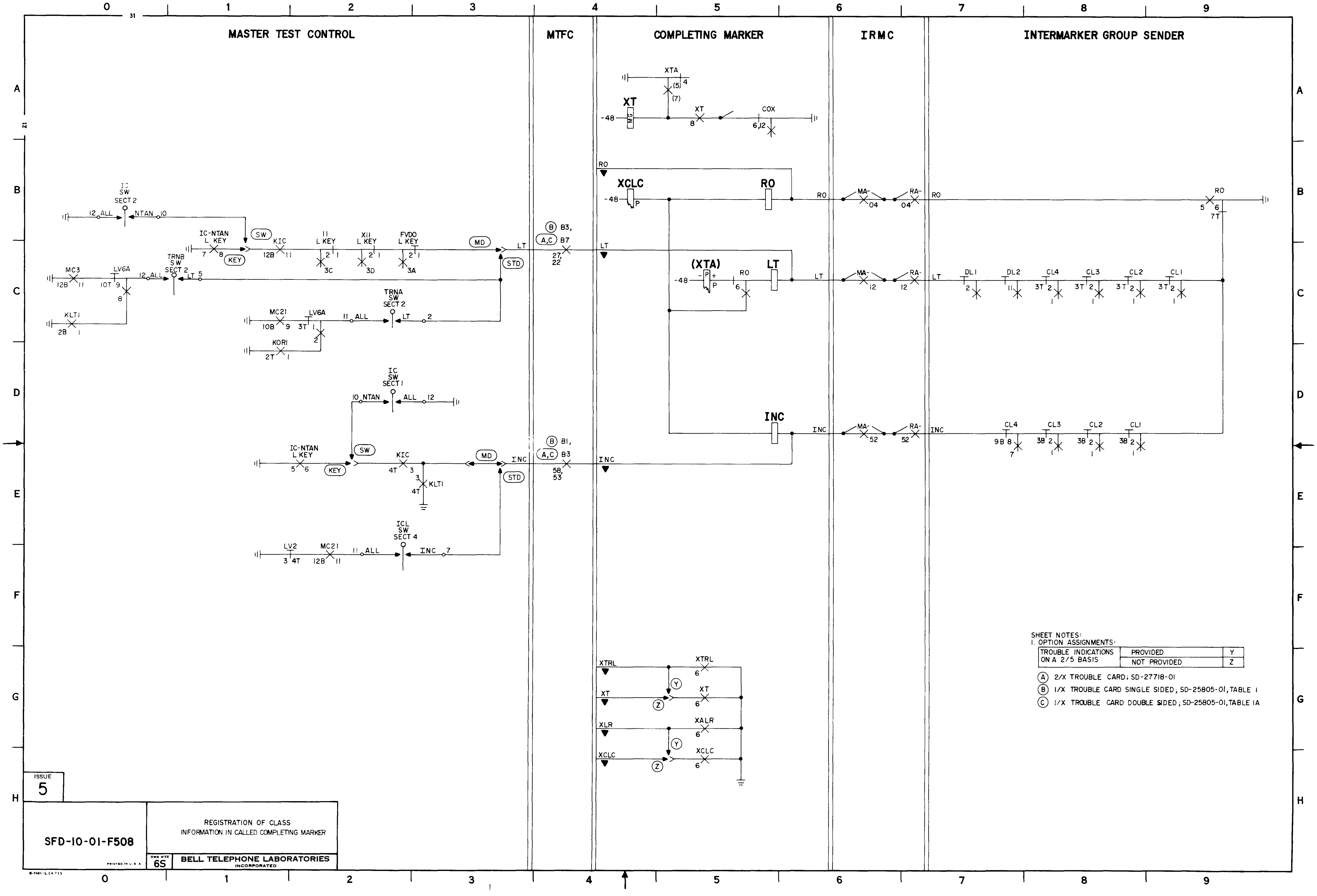
SFD-10-01-F507



SHEET NOTES:

1. OPTION ASSIGNMENTS:

TROUBLE INDICATIONS ON A 2/5 BASIS	PROVIDED	Y
	NOT PROVIDED	Z

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

ISSUE
5

SFD-10-01-F508

REGISTRATION OF CLASS
INFORMATION IN CALLED COMPLETING MARKER

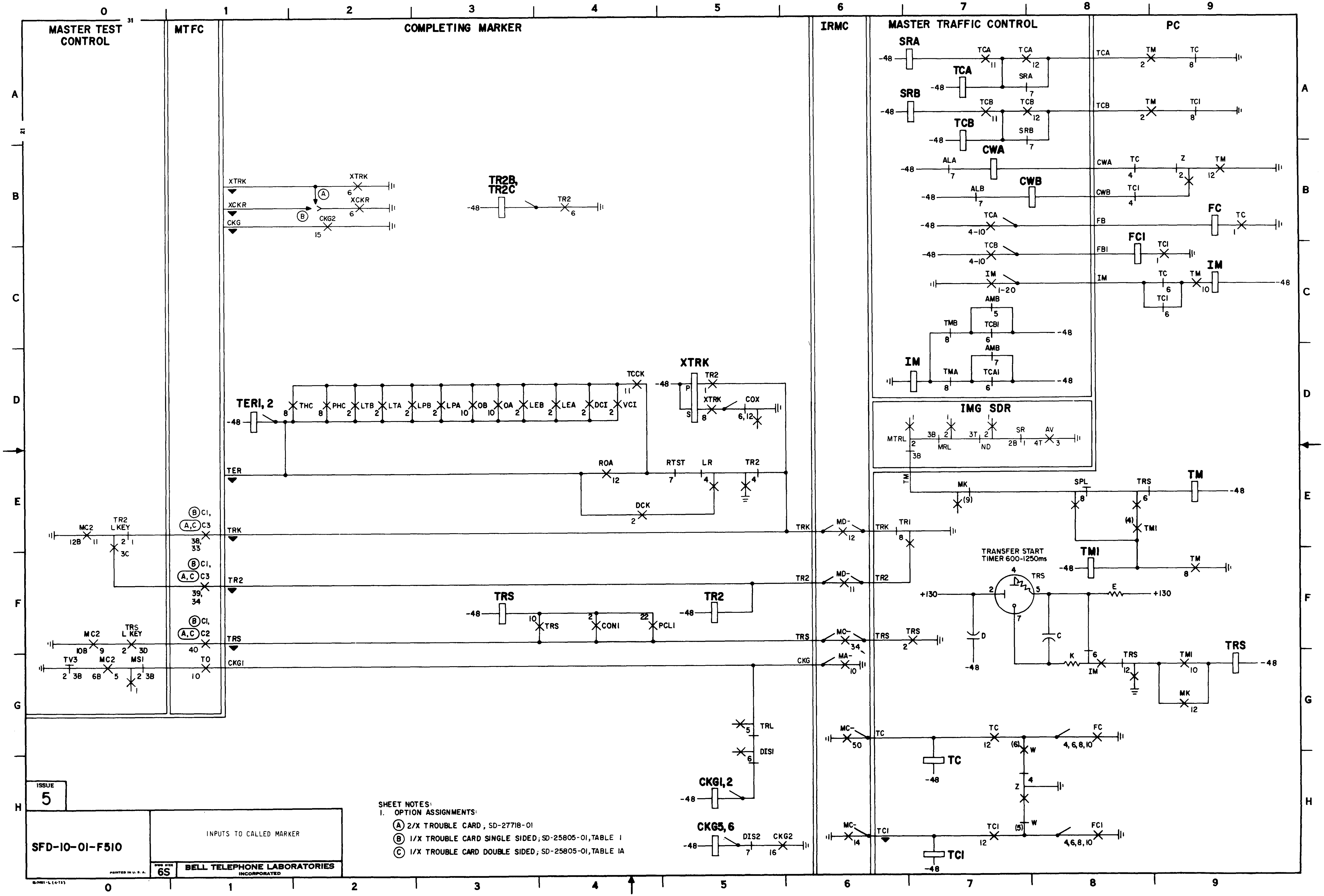
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7421-L (4-73)

SFD-10-01-F508



ISSUE
5

SFD-10-01-F510

INPUTS TO CALLED MARKER

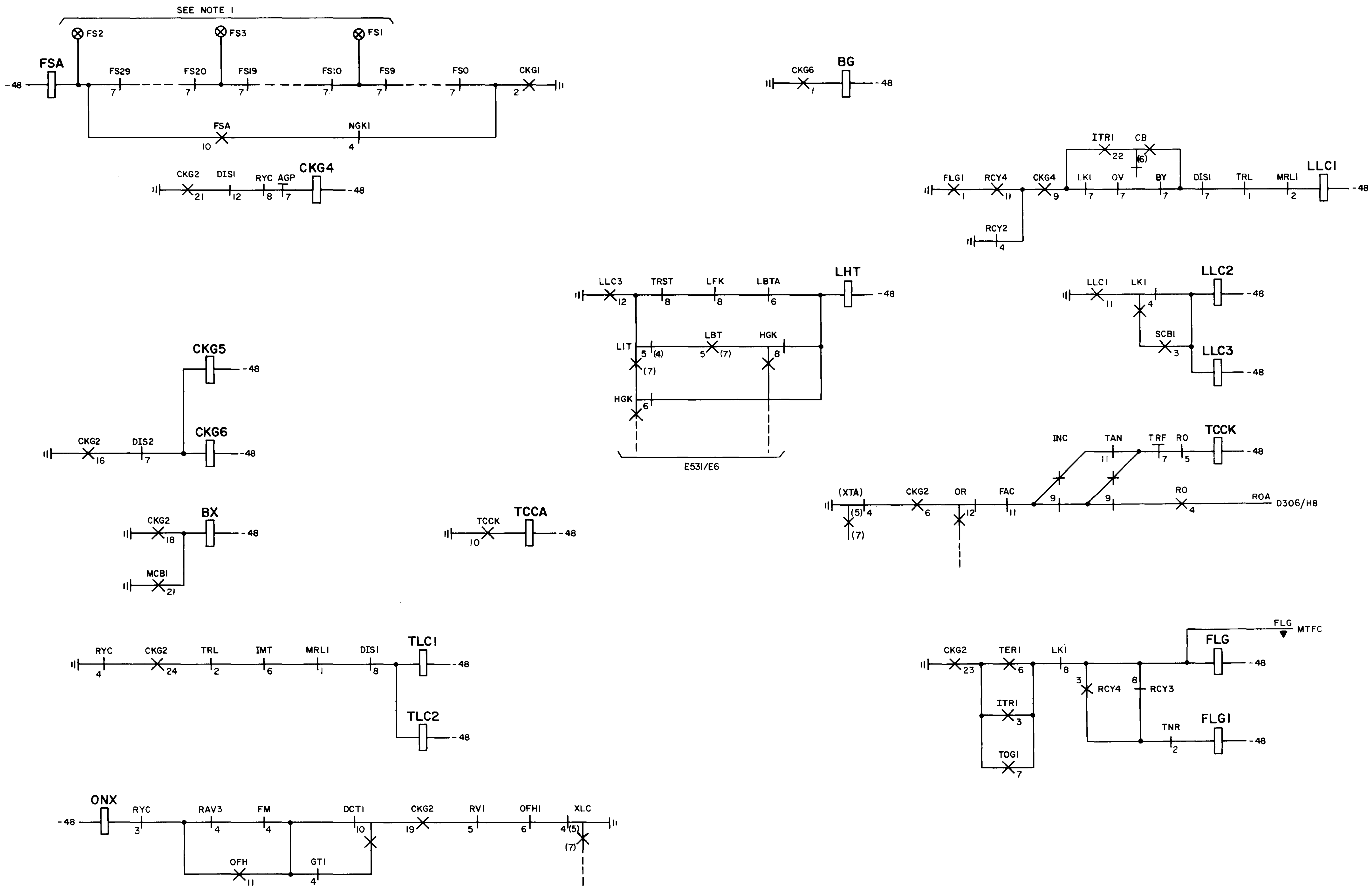
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD, SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

COMPLETING MARKER



SHEET NOTES:

1.

SIZE	CONN	TO
MAX OF 10 TL	FS1	FS2
MAX OF 20 TL	FS3	FS2
OVER 20 TL	NONE	

COMPLETING MARKER
MISCELLANEOUS CONTROL RELAYS

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SFD-10-01-F511

ISSUE 5

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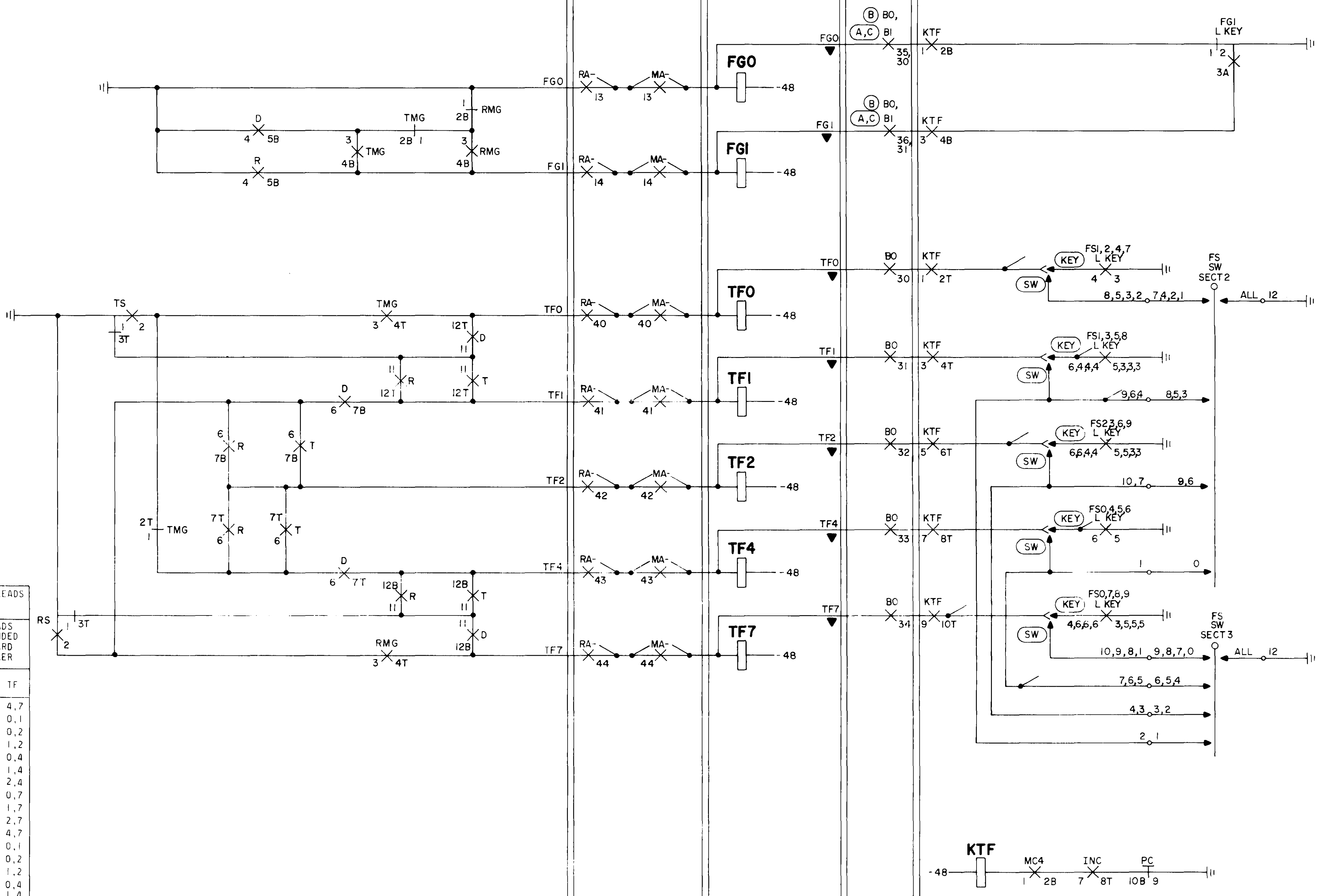
SFD-10-01-F511

E-7681 (10-71)



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

2.

20 TLF CALLED MARKER GROUP. PROPER POTENTIAL CONNECTIONS TO T,R,AND D LEADS IN IMG TRUNK, IMG SENDER RELAYS OPERATED AND LEADS GROUNDED TOWARD CALLED MARKERS

TRUNK LINK FRAME	CONNECTIONS TO IMG TRUNK LEADS			IMG SENDER RELAYS OPERATED					LEADS GROUNDED TOWARD MARKER	
	T	R	D	T,R, OR D	TS	TMG	RS	RMG	FG	TF
0	HRB		G	D	X				0	4,7
1	-	HRB	G	D			X		0	0,1
2	G	LRB	HRB	T	X	X	X		0	0,2
3	G	-	HRB	T			X		0	1,2
4	G	LRB	-	T	X	X			0	0,4
5	G	-	-	T					0	1,4
6	G	HRB	-	T	X				0	2,4
7	-	-	G	D					0	0,7
8	G	-	LRG	T			X	X	0	1,7
9	G	HRB	LRB	T	X		X	X	0	2,7
10	HRB	LRB	G	D	X		X	X	1	4,7
11	LRB	HRB	G	D	X	X	X		1	0,1
12	LRB	G	HRB	R	X	X	X		1	0,2
13	-	G	HRB	R			X		1	1,2
14	LRB	G	-	R	X	X			1	0,4
15	-	G	-	R					1	1,4
16	HRB	G	-	R	X				1	2,4
17	-	LRB	G	D			X	X	1	0,7
18	-	G	LRB	R			X	X	1	1,7
19	HRB	G	LRB	R	X		X	X	1	2,7

HRB MEANS HIGH-RESISTANCE BATTERY - 1260 OR 1300 OHMS
LRB MEANS LOW-RESISTANCE BATTERY - 210 OHMS
G MEANS GROUND - THROUGH A LOW-RESISTANCE RELAY WINDING

ISSUE
5

SFD-10-01-F512

TRUNK LINK FRAME IDENTIFICATION
CALLED MARKER - 20 TLF CALLED
MARKER GROUP

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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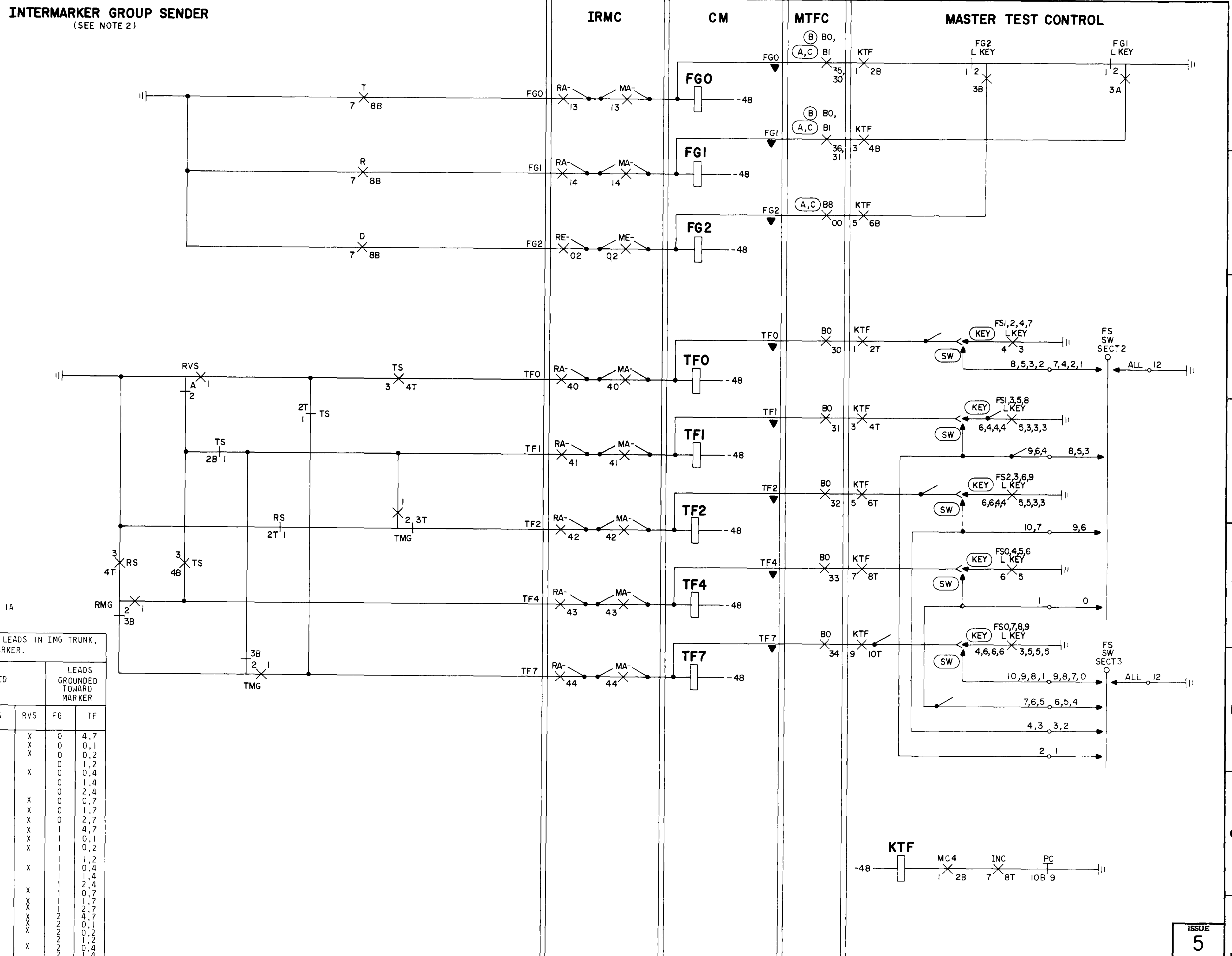

SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

2.

30 TLF CALLED MARKER GROUP. PROPER CONNECTIONS TO T, R, AND D LEADS IN IMG TRUNK, IMG SENDER RELAYS OPERATED AND LEADS GROUNDED TOWARD CALLED MARKER.

TRUNK LINK FRAME	CONNECTIONS TO IMG TRUNK LEADS			IMG SENDER RELAYS OPERATED						LEADS GROUNDED TOWARD MARKER	
	T	R	D	T, R, OR D	TMG	TS	RMG	RS	RVS	FG	TF
0	G	-	LRB	T			X	X	X	0	4,7
1	G	LRB	VHRB	T	X	X			X	0	0,1
2	G	HRB	VHRB	T		X			X	0	0,2
3	G	-	-	T						0	1,2
4	G	HRB	LRB	T		X	X	X	X	0	0,4
5	G	LRB	-	T	X	X				0	1,4
6	G	HRB	-	T		X				0	2,4
7	G	LRB	HRB	T	X	X		X	X	0	0,7
8	G	-	HRB	T				X	X	0	1,7
9	G	-	VHRB	T					X	0	2,7
10	-	G	LRB	R			X	X	X	1	4,7
11	LRB	G	VHRB	R	X	X			X	1	0,1
12	HRB	G	VHRB	R		X			X	1	0,2
13	-	G	-	R						1	1,2
14	HRB	G	LRB	R		X	X	X	X	1	0,4
15	LRB	G	-	R	X	X				1	1,4
16	HRB	G	-	R		X				1	2,4
17	LRB	G	HRB	R	X	X		X	X	1	0,7
18	-	G	HRB	R				X	X	1	1,7
19	-	G	VHRB	R					X	1	2,7
20	-	LRB	G	D			X	X	X	2	4,7
21	LRB	VHRB	G	D	X	X			X	2	0,1
22	HRB	VHRB	G	D		X			X	2	0,2
23	-	-	G	D						2	1,2
24	HRB	LRB	G	D		X	X	X	X	2	0,4
25	LRB	-	G	D	X	X				2	1,4
26	HRB	-	G	D		X				2	2,4
27	LRB	HRB	G	D	X	X		X	X	2	0,7
28	-	HRB	G	D				X	X	2	1,7
29	-	VHRB	G	D					X	2	2,7

LRB MEANS LOW-RESISTANCE BATTERY-210 OHMS
HRB MEANS HIGH-RESISTANCE BATTERY-1670 OHMS
VHRB MEANS VERY HIGH-RESISTANCE BATTERY-7500 OHMS
G MEANS GROUND-THROUGH A LOW-RESISTANCE TRUNK RELAY WINDING

ISSUE
5

TRUNK LINK FRAME
IDENTIFICATION CALLED MARKER-
30 TLF CALLED MARKER GROUP

SFD-10-01-F513

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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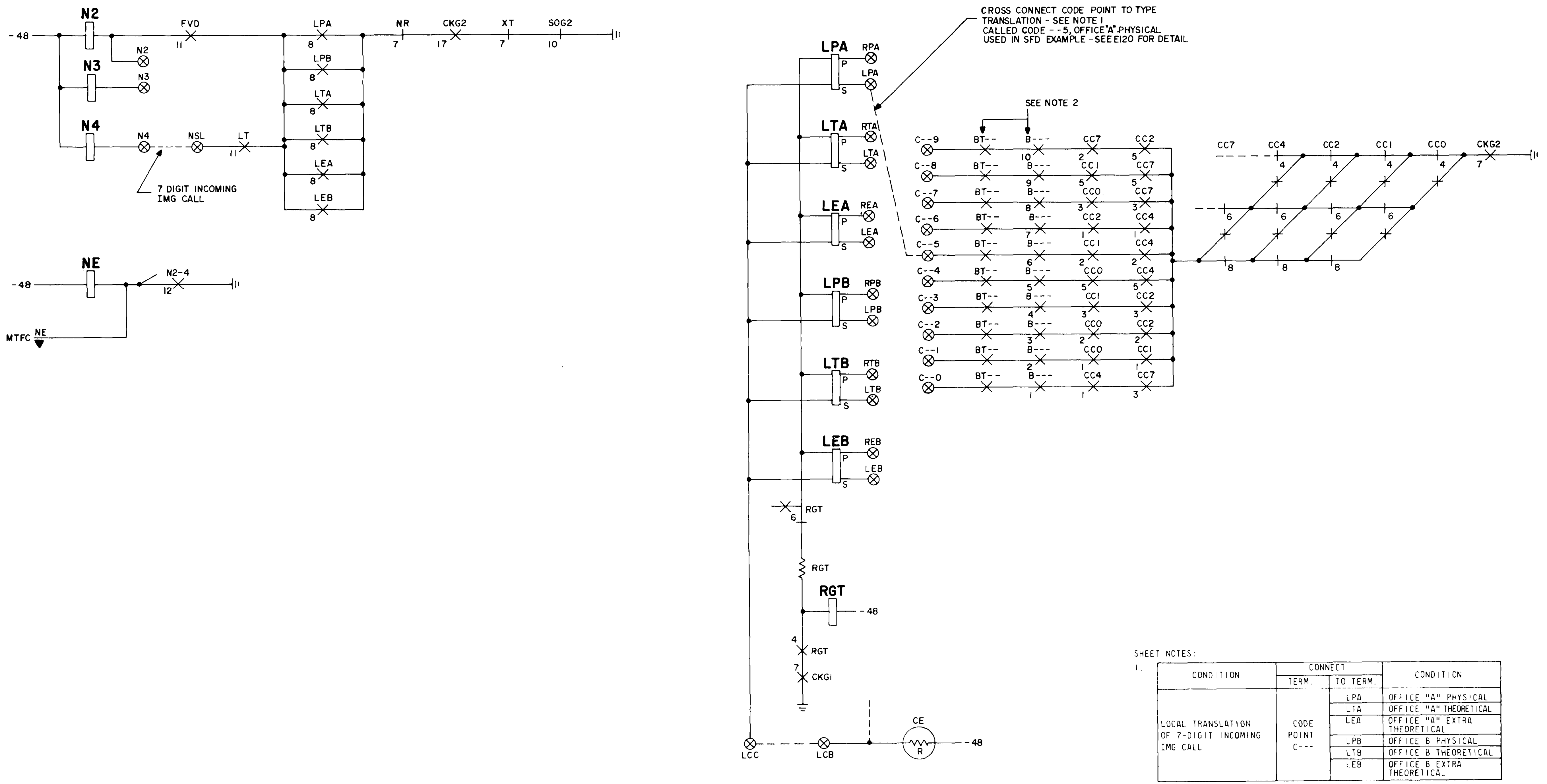
K&E 10 1155 3-75 40991
E-7421 (10-71)

COMPLETING MARKER



7 DIGIT INCOMING IMG CALL

CROSS CONNECT CODE POINT TO TYPE TRANSLATION - SEE NOTE 1 CALLED CODE - - 5, OFFICE "A" PHYSICAL USED IN SFD EXAMPLE - SEE E120 FOR DETAIL

SEE NOTE 2

SHEET NOTES:

1.

CONDITION	CONNECT		CONDITION
	TERM.	TO TERM.	
LOCAL TRANSLATION OF 7-DIGIT INCOMING IMG CALL	CODE POINT C---	LPA	OFFICE "A" PHYSICAL
		LTA	OFFICE "A" THEORETICAL
		LEA	OFFICE "A" EXTRA THEORETICAL
		LPB	OFFICE B PHYSICAL
		LTB	OFFICE B THEORETICAL
		LEB	OFFICE B EXTRA THEORETICAL

RPA, RPB, RTA, RTB, REA, AND REB CROSS CONNECTION POINTS ARE USED FOR RINGER TEST ROUTES. (SEE SHEET E131)

2. SEE SHEET E120 FOR RELAY DESIGNATION AND CONTACT ARRANGEMENT.

ISSUE
5

SFD-10-01-F514

NUMBER GROUP AND
C DIGIT TRANSLATION

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
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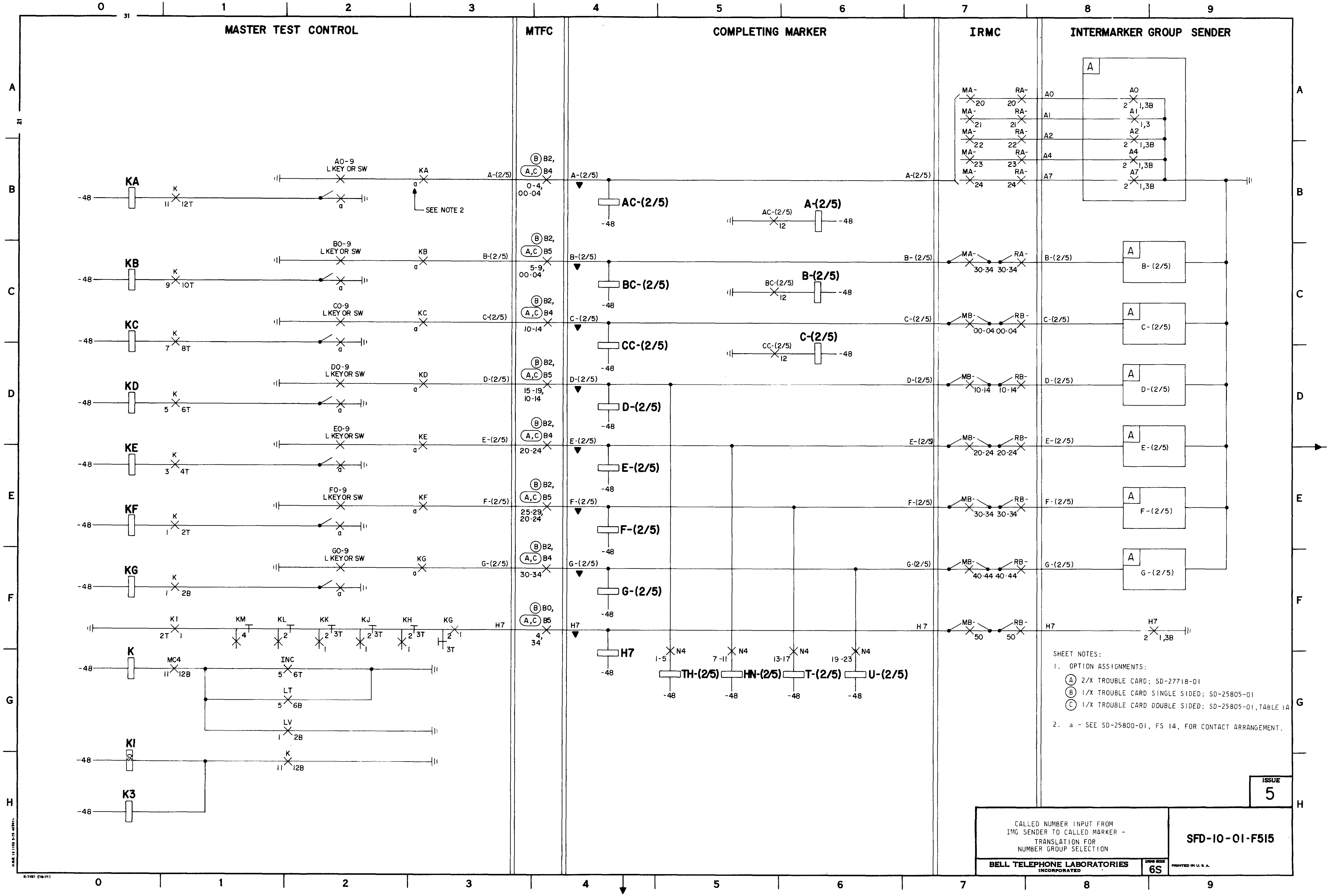
E-7481-L (4-73)



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA
2. a - SEE SD-25800-01, FS 14, FOR CONTACT ARRANGEMENT.

CALLED NUMBER INPUT FROM
IMG SENDER TO CALLED MARKER -
TRANSLATION FOR
NUMBER GROUP SELECTION

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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SFD-10-01-F515

ISSUE 5

SFD-10-01-F515

ESTABLISHING INTERMARKER GROUP CONNECTION (SEE NOTE 1)

(SUBSCRIBER TO SUBSCRIBER)

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F603	CONNECTION TO TRUNK LINK FRAME-CALLED MARKER GROUP
F604	RESERVED
F605	CONNECTION TO NUMBER GROUP-CALLED MARKER GROUP
F606	RESERVED
F607	CONNECTION TO LINE LINK FRAME-CALLED MARKER GROUP
F608	RESERVED
F609	NETWORK CONNECTION-CALLED MARKER GROUP
F610	RESERVED
F611	CALLED COMPLETING MARKER RELEASE, RINGING CALLED SUBSCRIBER, AND DISCONNECT

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL THE TRUNK LINK, NUMBER GROUP, LINE LINK, NETWORK CONNECTION, AND MARKER RELEASE IN THE CALLED MARKER GROUP ARE ALMOST IDENTICAL TO THE SAME OPERATIONS PERFORMED ON AN INCOMING CALL. THE REFERENCE INDEX ON SHEET F603, F605, F607, F609, OR F611 IDENTIFIES THE D SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

ISSUE 5

PART F6
CONNECTION TO TRUNK LINK,
NUMBER GROUP, LINE LINK,
NETWORK CONNECTION, AND
MARKER RELEASE-CALLED
MARKER GROUP

BELL TELEPHONE LABORATORIES
INCORPORATED

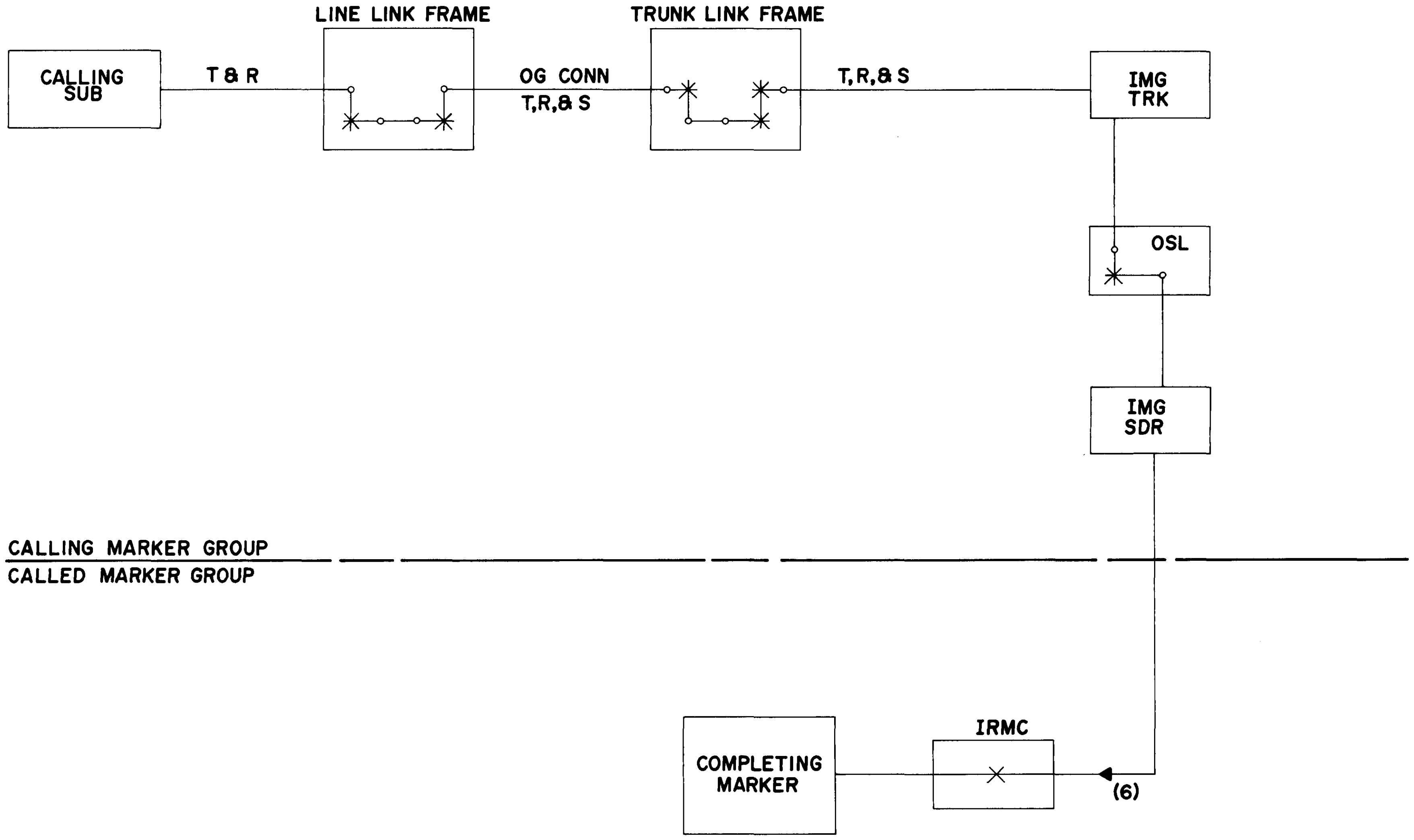
DWG SIZE 6S

SFD-10-01-F601

PRINTED IN U.S.A.

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



SEE NOTE 1 →

REFERENCE INDEX

PAGE NO.	TITLE
D302	SEQUENCE CHART-SEIZURE OF TRUNK LINK FRAME AND TRUNK
D304	TRUNK LINK FRAME SEIZURE
D306	TRUNK CLASS INPUT TO COMPLETING MARKER
D307	OPERATION OF CONTROL RELAYS IN TRUNK LINK FRAME

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL CONNECTION TO THE TRUNK LINK FRAME IN THE CALLED MARKER GROUP IS ALMOST IDENTICAL TO THE TRUNK LINK CONNECTION ON AN INCOMING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE D SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

ISSUE
5

CONNECTION TO TRUNK LINK
FRAME-CALLED MARKER GROUP

SFD-10-01-F603

BELL TELEPHONE LABORATORIES
INCORPORATED

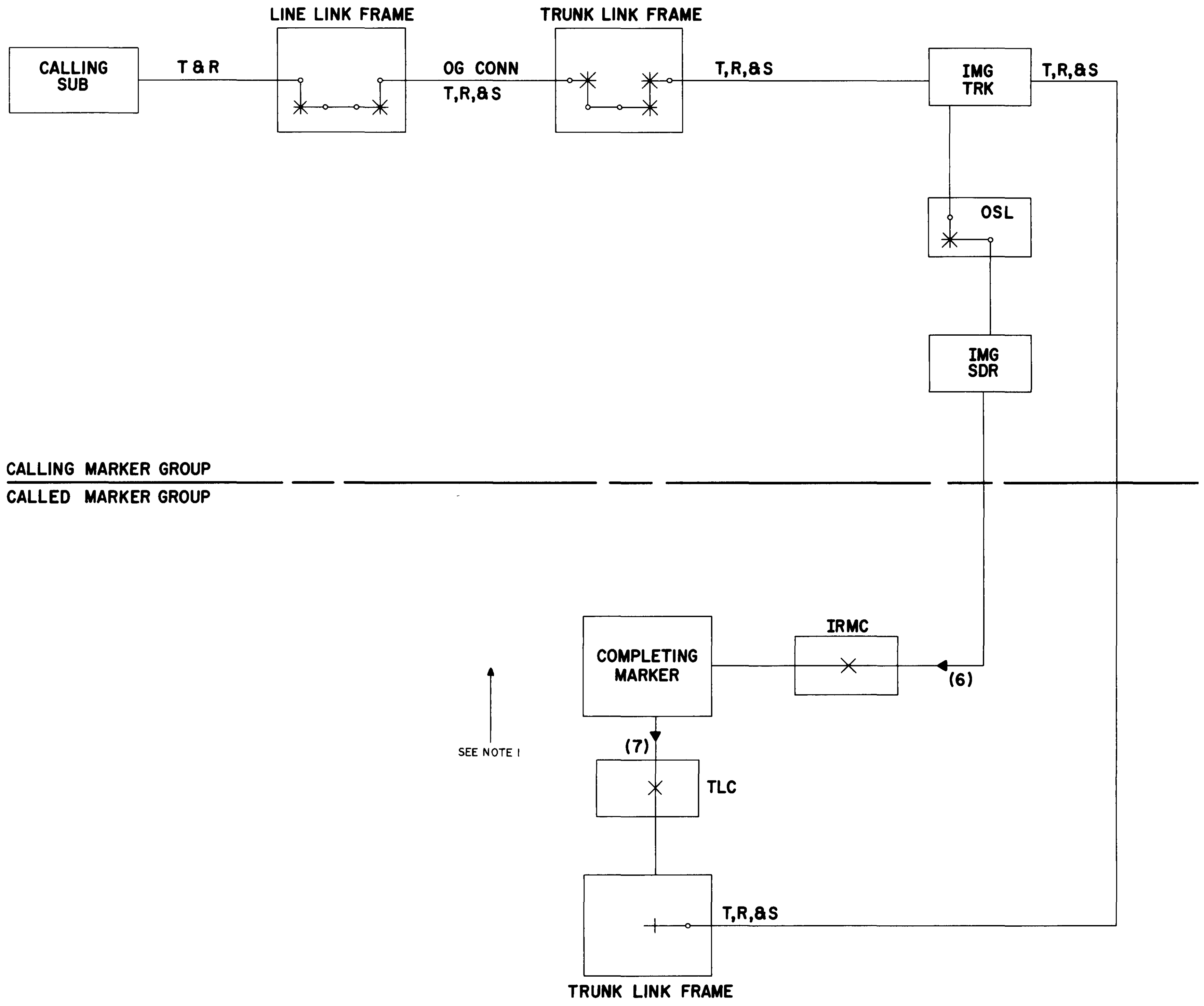
DWG SIZE
6S

PRINTED IN U. S. A.

SFD-10-01-F603
2 SHEETS, SHEET 1

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



REFERENCE INDEX

PAGE NO.	TITLE
D402	SEQUENCE CHART-NUMBER GROUP SEIZURE AND CALLED NUMBER TRANSLATION
D403	SEQUENCE CHART-INTERCEPT TREATMENT
D404	SEQUENCE CHART-PBX ALLOTTED TERMINAL HUNTING
D405	SEQUENCE CHART-PBX RECYCLE
D406	SEQUENCE CHART-TERMINAL HUNTING NON-ALLOTED
D407	NUMBER SERIES START SELECTION
D408	NUMBER GROUP START AND OFF-NORMAL CONTROL
D409	NUMBER GROUP SEIZURE
D410	HUNDREDS AND TENS DIGIT NUMBER GROUP INFORMATION AND TENS BLOCK SCREENING SELECTION
D411	PHYSICAL, THEORETICAL, AND NUMBER GROUP CHECK
D413	UNITS DIGIT CONTROL
D414	NUMBER GROUP TRANSLATION
D415	RINGING COMBINATION CONTROL AND VERIFICATION BY TEST FRAME
D416	LINE VERIFICATION MATCH
D417	LINE LOCATION CONTROL
D418	NUMBER GROUP RELEASE CONTROL
D419	BLANK NUMBER, INTERCEPT, AND PBX RECYCLE
D420	PBX ALLOTTER CONTROL, NUMBER GROUP CONTROL APPLIQUE FOR USE WITH ALLOTTED PBX HUNTING
D421	PBX ALLOTTER; HUNDREDS AND TENS DIGIT IDENTIFIER
D422	PBX ALLOTTER; NUMBER GROUP SELECTION
D423	PBX ALLOTTER; THOUSANDS DIGIT IDENTIFIER
D424	PBX HUNTING
D425	NUMBER GROUP CONTROL APPLIQUE FOR USE WITH PBX HUNTING
D426	LINE VERIFICATION TEST SLEEVE VERIFICATION

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL CONNECTION TO THE NUMBER GROUP IN THE CALLED MARKER GROUP IS ALMOST IDENTICAL TO THE NUMBER GROUP CONNECTION ON AN INCOMING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE D SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

ISSUE
5

CONNECTION TO NUMBER GROUP-
CALLED MARKER GROUP

SFD-10-01-F605

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

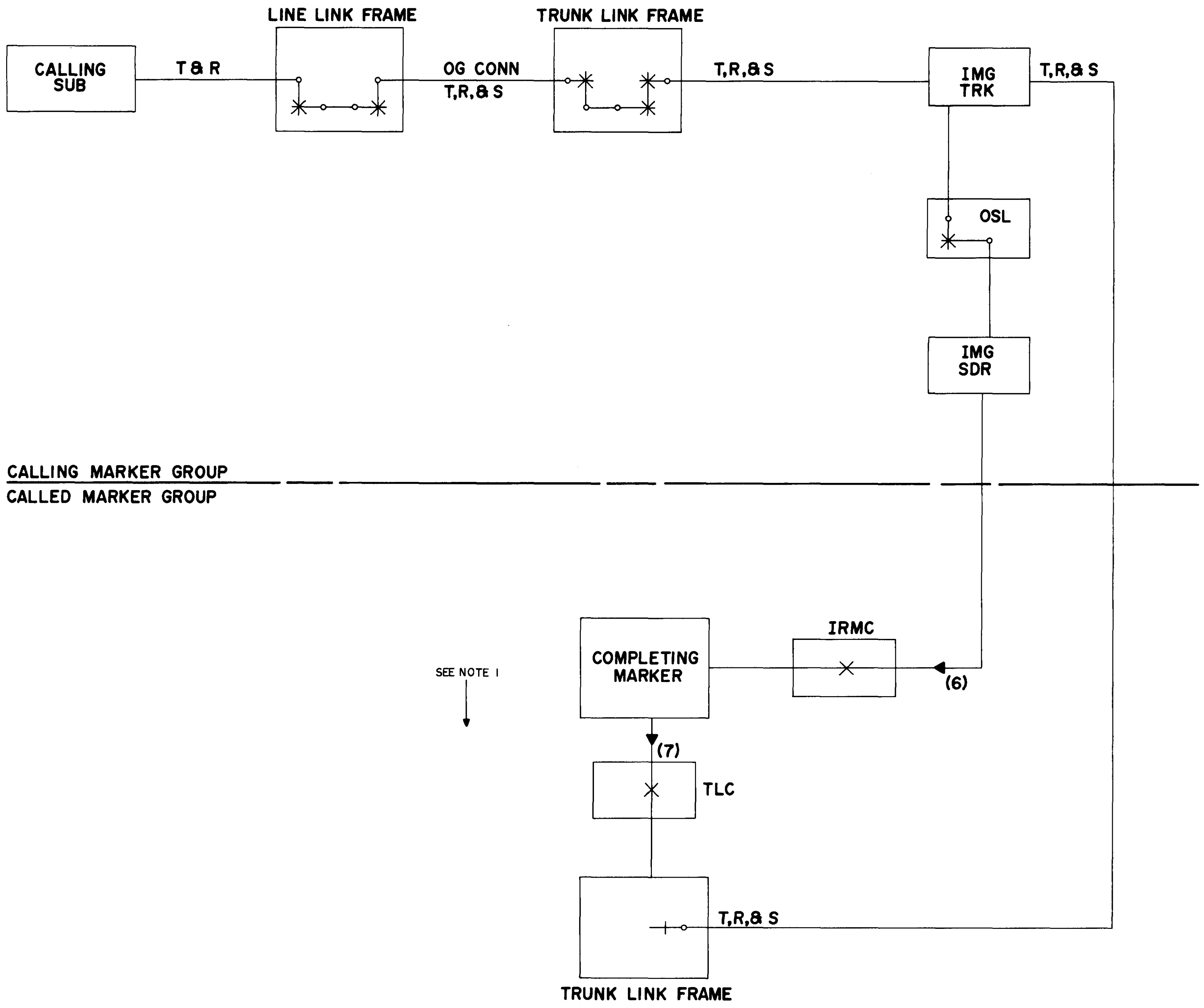
PRINTED IN U.S.A.

SFD-10-01-F605
2 SHEETS, SHEET 1

E-7421 (10-71)

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



REFERENCE INDEX

PAGE NO.	TITLE
D502	SEQUENCE CHART-LINE LINK FRAME SEIZURE AND CONTROL
D504	LINE LINK FRAME SEIZURE
D505	LINE LINK FRAME SEIZURE
D507	LINE LINK FRAME CONTROLS NON PAIRED OPERATION
D508	PAIRED LINE LINK FRAMES AUXILIARY LINE LINK FRAME SEIZURE
D509	PAIRED LINE LINK FRAMES AUXILIARY LINE LINK CONTROL
D510	20, 30, 60 CLASSES OF SERVICE LINE VERIFICATION TEST AND INPUT TO COMPLETING MARKER
D511	100 CLASSES OF SERVICE LINE VERIFICATION TEST AND INPUT TO COMPLETING MARKER

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL CONNECTION TO THE LINE LINK FRAME IN THE CALLED MARKER GROUP IS ALMOST IDENTICAL TO THE LINE LINK CONNECTION ON AN INCOMING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE D SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

ISSUE
5

CONNECTION TO LINE LINK
FRAME-CALLED MARKER
GROUP

SFD-10-01-F607

BELL TELEPHONE LABORATORIES
INCORPORATED

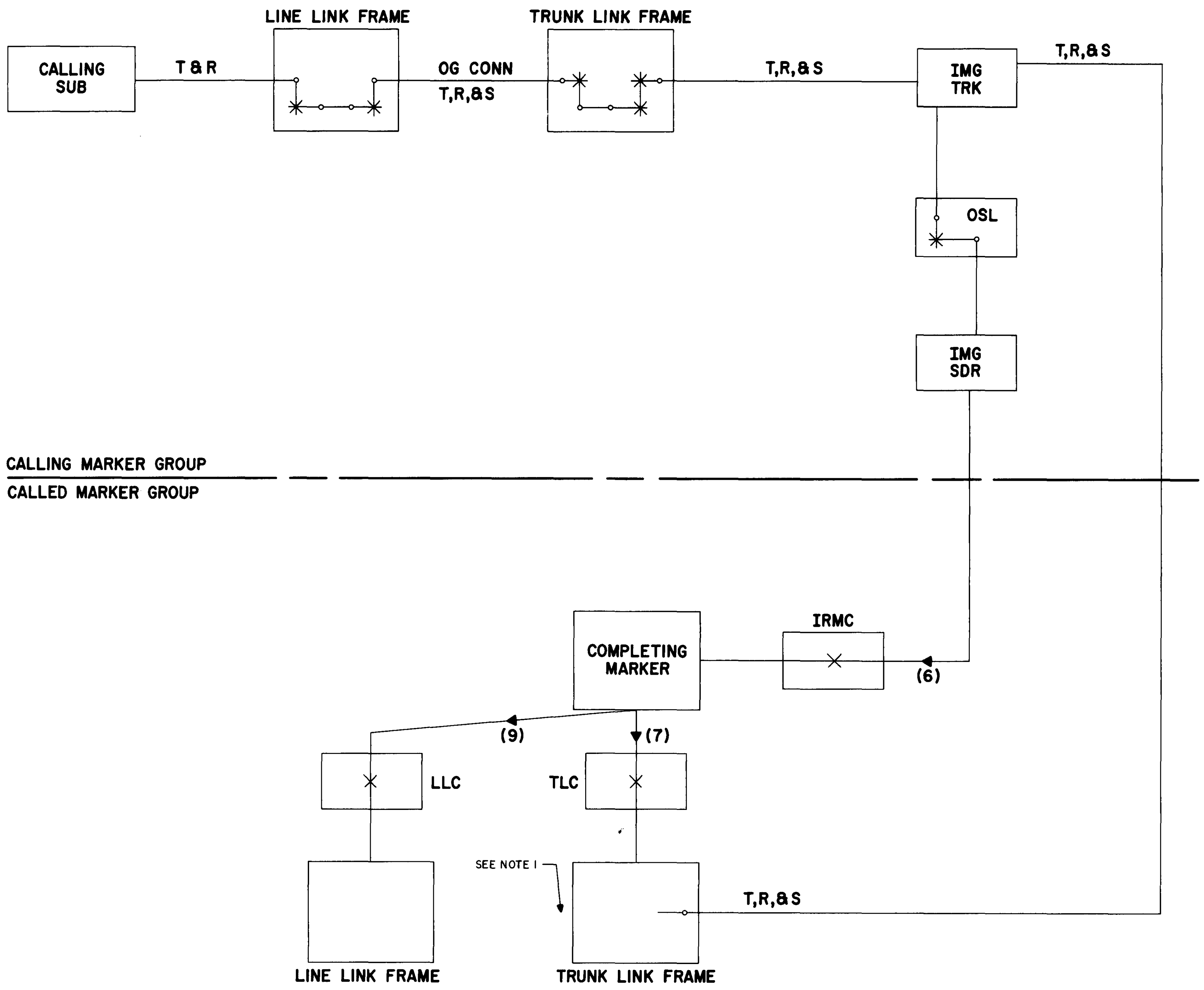
DWG SIZE
6S

PRINTED IN U. S. A.

SFD-10-01-F607
2 SHEETS, SHEET 1

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



REFERENCE INDEX

PAGE NO.	TITLE
D602	SEQUENCE CHART-PREPARATION FOR CHANNEL TEST
D603	SEQUENCE CHART-CHANNEL SELECTION, LINKAGE CHECK, AND RINGING SWITCH CONTROL
D604	JUNCTOR PATTERN UNITS CONTROL
D605	JUNCTOR PATTERN TENS CONTROL
D606	SEQUENCE CHART-JUNCTOR SEQUENCE CONTROL
D607	JUNCTOR SEQUENCE CONTROL
D608	JUNCTOR SUBGROUP SELECTION FOR 2,2-3,5, AND 10 TLF SIZES
D609	JUNCTOR SUBGROUP SELECTION FOR 3,4,6,7,8,9 TLF SIZES
D610	JUNCTOR SUBGROUP CONNECTOR RELAYS
D612	RIGHT OR LEFT, REGULAR, EXTENSION, OR SECOND EXTENSION TRUNK LINK FRAME
D613	JUNCTOR CONNECT RELAYS
D614	COMPLETING MARKER CHANNEL TEST CONTROL
D615	SEQUENCE CHART-CONTROL OF CHANNEL SELECTION BY MASTER TEST CONTROL
D616	COMPLETING MARKER CHANNEL TEST AND SELECTION
D617	COMPLETING MARKER CHANNEL TEST AND SELECTION AND FAILURE TO MATCH
D618	LINE LINK FRAME SELECT MAGNET OPERATION
D619	TRUNK LINK FRAME SELECT MAGNET OPERATION (SD-26032-01)
D620	TRUNK LINK FRAME SELECT AND HOLD MAGNET OPERATION (SD-27879-01)
D621	HOLD MAGNET OPERATION
D622	HOLD MAGNET TIMING AND CONTROL
D623	HOLD MAGNET TIMING AND CONTROL
D624	HOLD MAGNET SIMULATION AND CONTROL BY MASTER TEST CONTROL ON INC, ITNP, LT, AND MLV CLASSES OF TEST
D625	LINKAGE CHECK AND HOLD MAGNET OPERATION
D626	OPTIONAL ARRANGEMENTS FOR HOLD MAGNET OPERATION
D627	COMPLETING MARKER CONTINUITY AND FALSE CROSS AND GROUND TEST
D628	RINGING SWITCH CONTROL
D629	RINGING SWITCH CONTROL
D630	RINGING SWITCH CONTROL
D631	NO TEST CONNECTOR

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL THE NETWORK CONNECTION IN THE CALLED MARKER GROUP IS ALMOST IDENTICAL TO THE NETWORK CONNECTION ON AN INCOMING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE D SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

ISSUE
5

NETWORK CONNECTION-
CALLED MARKER GROUP

SFD-10-01-F609

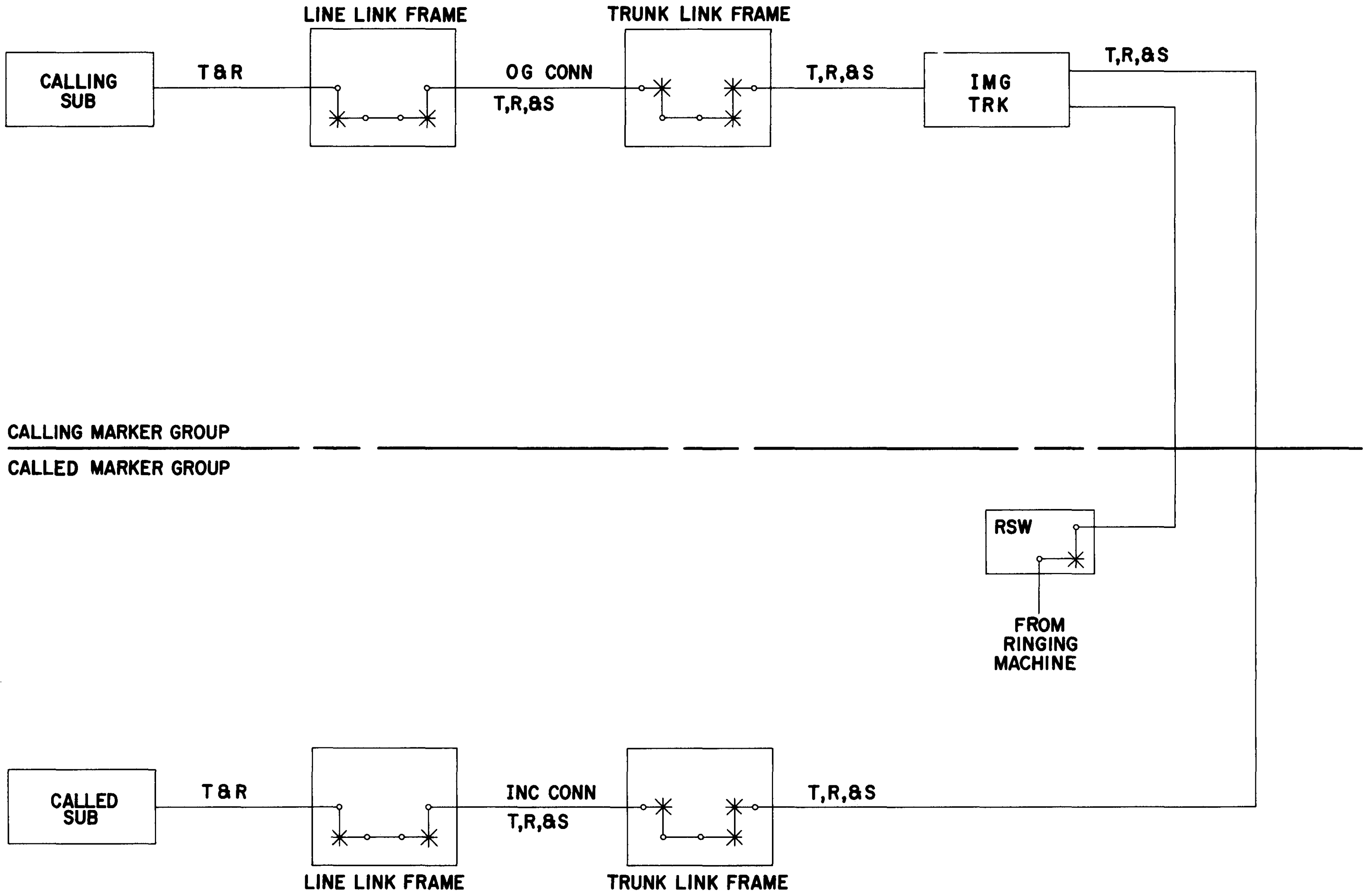
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U.S.A.

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)



REFERENCE INDEX

PAGE NO.	TITLE
D702	SEQUENCE CHART-COMPLETING MARKER RELEASE
D703	SEQUENCE CHART-COMPLETING MARKER RELEASE
D704	COMPLETING MARKER RELEASE
D705	COMPLETING MARKER RELEASE
D706	RINGING AND TALKING PATH
D707	SEQUENCE CHART-RINGING AND SUBSCRIBER DISCONNECT
D708	SEQUENCE CHART-MARKER ACTION FROM FAILURES (INCOMING)
D709	COMPLETING MARKER TROUBLE RECORD CONTROL

SHEET NOTES:

1. ON AN INTERMARKER GROUP CALL THE COMPLETING MARKER RELEASE IN THE CALLED MARKER GROUP IS ALMOST IDENTICAL TO THE MARKER RELEASE ON AN INCOMING CALL. THE REFERENCE INDEX ON THE SHEET IDENTIFIES THE D SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

ISSUE 5

CALLED COMPLETING MARKER
RELEASE, RINGING CALLED
SUBSCRIBER, AND DISCONNECT

SFD-10-01-F611

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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E-7421 (10-71)

ESTABLISHING INTERMARKER GROUP CONNECTION

(SUBSCRIBER TO SUBSCRIBER)

INDEX

PAGE NO	TITLE
F701	PART F7 - MAINTENANCE - INTERMARKER GROUP CALL
F702	SIMULATION OF INTERMARKER GROUP CALLS WHICH PRODUCE 2/X DOUBLE SIDED TROUBLE RECORD CARDS (E5488)
F703	NO. 5 CSBR 2/X DOUBLE SIDED TROUBLE RECORD CARD (E5488) INDICATING DESIGNATIONS WHICH MAYBE PERFORATED ON INTERMARKER GROUP CALL
F704	SIMULATION OF INTERMARKER GROUP CALLS WHICH PRODUCE I/X DOUBLE SIDED TROUBLE RECORD CARDS (E4393)
F705	NO. 5 CSBR I/X DOUBLE SIDED TROUBLE RECORD CARD (E4393) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTERMARKER GROUP CALL
F706	SIMULATION OF INTERMARKER GROUP CALLS WHICH PRODUCE I/X SINGLE SIDED TROUBLE RECORD CARDS (E3638)
F707	NO. 5 CSBR I/X SINGLE SIDED TROUBLE RECORD CARD (E3638) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTERMARKER GROUP CALL.
F708	CORRELATION BETWEEN JUNCTOR GROUP, JUNCTOR STEP, AND JUNCTOR SEQUENCE SELECTION
F709	SIMULATION OF INTERMARKER GROUP CALLS WHICH PRODUCE AN AUTOMATIC TROUBLE ANAYLSIS EXCEPTION REPORT
F710	INTERMARKER GROUP SENDER (IMS) CLASS OF TEST - SUBSCRIBER TO SUBSCRIBER - CALLING MARKER GROUP
F711	INTERMARKER GROUP SENDER (IMS) CLASS OF TEST - SUBSCRIBER TO SUBSCRIBER - CALLING MARKER GROUP
F712	INTERMARKER GROUP TRUNK TEST SUBSCRIBER TO SUBSCRIBER - CALLING MARKER GROUP
F713	INTERMARKER GROUP TRUNK TEST - SUBSCRIBER TO SUBSCRIBER - CALLING MARKER GROUP

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT INFORMATION SHOWN MAY NOT BE COMPLETE.

PART F7
MAINTENANCE-INTERMARKER
GROUP CALL

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES

SFD-10-01-

F701

K&E 19 1153 2-77 413974

E-7421 (6-73)
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DOUBLE SIDED 2/X TROUBLE RECORD CARD (E5488)						KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				50G	57,32	IAO	TSTB	IAO	
CLASS OF CALL		ORIG		OR	S3,20		CL	OR-DP/MF	
TRANSLATOR CLASS		LT		LT	S3,00		TRNA	LT	
MARKER				MKR,CM	S8,30	MT(0-11)			
		TENS		DRTO,1	S8,54,A				MTT1
		UNITS		DR(2/5)	S8,44,50-53		MTU	0-9	
CALLED DIGITS A-C (0-9) CALLED IMG OFFICE CODE				A-C(2/5)	S1,00-24	A-C(0-9)	A-C	0-9	
TERMINATING TEST LINE				(DIGITS) D-G,H7(2/5)	S1,30-54, R8,00-04,14	TTL			
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/FT-(2/4)	R1,00-03	FT(0-5)	FT	0-5	
		UNITS		FU-(2/5)	R1,04,10-13	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,14,20-24	VG(0-13)	VGU	0-13	VGT1
	HORIZONTAL GROUP			HG-(2/5)	R1,30-34	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,40-44	VF(0-4)	VF	0-4	
CLASS OF SERVICE	30,60,100 CLASSES	TENS		CT-(2/5)	SA1,B,00-03	CST(0-9)	CST	0-9	
		UNITS		CU-(2/5)	SA1,4,10-13	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	SA2,24				
		30-59		CGB	SA2,30	CGB			CGB
RATE TREATMENT		TENS 0		CGA	SA2,24	CSGA			CSGA
		TENS 1		CGB	SA2,30	CSGB			CSGB
		UNITS		CRU-(2/5)	SA1,14,20-23	CRU(0-9)	CRU	0-9	
TRUNK LINK	FRAME	TENS		FS/T-(1/3)	SA0,21-23	FG(0-2)			FG(0-2)
		UNITS		FS/U-(2/5)	SA0,24,30-33	FS(0-9)	FS	0-9	
			2			FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS/T-(0,1)	SA0,34,40	TS(10-19)			TST1
		UNITS		TS/U-(2-5)	SA0,41-44,50	TS(0-9)	TSU	0-9	
			2			TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA	R6,13	GPA			GPA
	GROUP B			GPB	R6,14	GPB			GPB
OUTGOING SENDER			5			OSS			OSS
	SENDER GROUP	TENS	4	OG1/T-(0-1)	R4,0-1	SG(0-10)			SGT
		UNITS		OSG/U-(2/5)	R4,2-4,10,11		SG	0-10	
	GROUP A			SSA	R4,12	SGA			SGA
	GROUP B			SSB	R4,13	SGB			SGB
	SENDER			OS(0-4)	R3,10-14	OS(0-4)	OS	0-4	
CHANNEL				CH-(2/5)	RA7,24,30-33	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	RA8,52,53	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	RA7,44,50-33	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	RA,GS (1-5)	S6,21,R6,0-4	RA(0-3)	RAU	0-9	RAT1
OBSERVED CALL				OBS	R6,S2	OBS			OBS

SHEET NOTES:

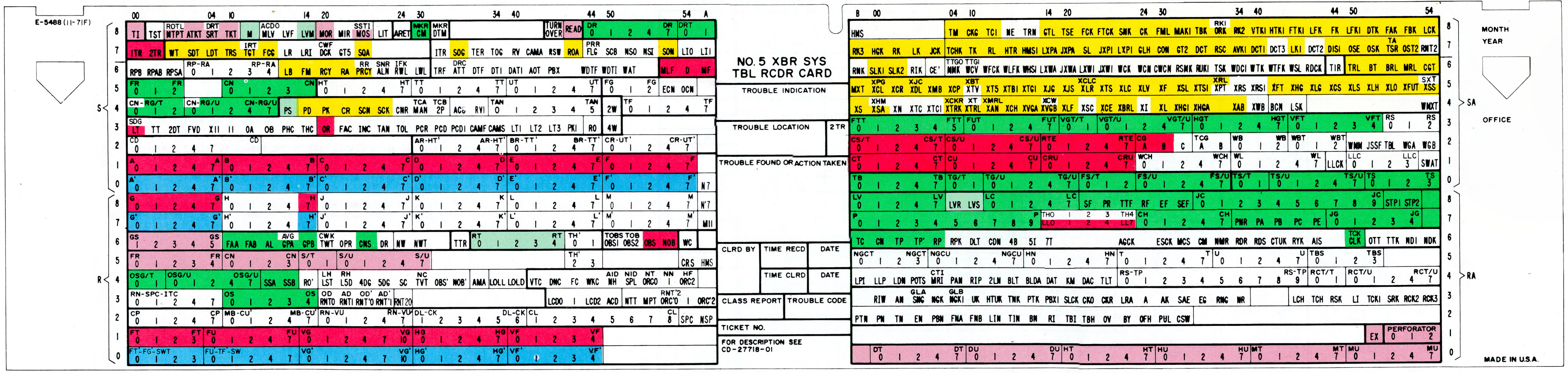
1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTERMARKER GROUP TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON F708 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. SG KEY OR SWITCH IS LOCATED ON A AMRST PANEL AND IS USED ON A IMS SENDER TYPE OF TEST (F710) TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND OS- KEY OR SWITCH.
6. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.

ISSUE	DWG SIZE	SIMULATION OF INTERMARKER GROUP CALLS WHICH PRODUCE 2/X DOUBLE SIDED TROUBLE RECORD CARDS (E5488)
5	6S	
SFD-10-01-	F702	BELL LABORATORIES

🟪 MISCELLANEOUS	🟦 OUTPUT FROM MARKER TO INTERMARKER GROUP SENDER
🟥 INPUT TO MARKER	🟨 PROGRESS AND TROUBLE INDICATIONS
🟩 CIRCUIT PATHS USED	▨ DESIGNATIONS WHICH MAY BE PERFORATED UNDER VARIOUS CONDITIONS

COMPLETING MARKER
CALLING MARKER GROUP
INTERMARKER GROUP CALL
2/X DOUBLE SIDED TROUBLE CARD

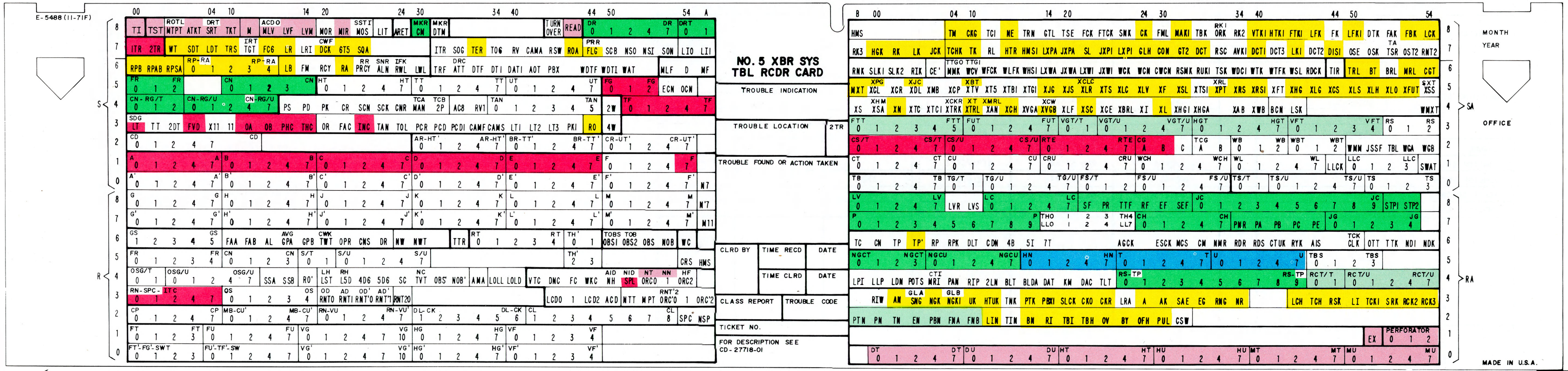
SEE NOTE 1



🟪 MISCELLANEOUS	🟦 OUTPUT FROM MARKER TO NUMBER GROUP
🟥 INPUT TO MARKER	🟨 PROGRESS AND TROUBLE INDICATIONS
🟩 CIRCUIT PATHS USED	▨ OUTPUT FROM NUMBER GROUP TO MARKER

COMPLETING MARKER
CALLING MARKER GROUP
INTERMARKER GROUP CALL
2/X DOUBLE SIDED TROUBLE CARD

SEE NOTE 2



SHEET NOTES:

1. IF TROUBLE CARD INDICATES THE RECORD WAS MADE IN CALLING MARKER GROUP, USE THE SIMULATION CHART ON THE FACING PAGE TO SIMULATE TROUBLE RECORD.
2. IF TROUBLE CARD INDICATES THE RECORD WAS MADE IN CALLED MARKER GROUP, REFER TO SIMULATION CHART FOR TERMINATING CALL (SFD-10-01-D902) TO SIMULATE TROUBLE RECORD.

ISSUE 5

NO 5 CSBR 2/X DOUBLE SIDED TROUBLE RECORD CARD (E5488) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTERMARKER GROUP CALL

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SFD-10-01-F703

PRINTED IN U.S.A.

E-7481 (10-71)

SFD-10-01-F703
7 SHEETS, SHEET 1

DOUBLE SIDED 1/X TROUBLE RECORD CARD (E4393)						KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				50G	S7,32	IAO	TSTB	IAO	
CLASS OF CALL	ORIG			OR	S3,20		CL	OR-DP/MF	
TRANSLATOR CLASS	LT			LT	S3,00		TRNA	LT	
MARKER			7	MKR	S8,30	MT(0-11)			
	TENS 1			DRT1	S8,54				MT11
	TENS 0			DRTO	S7,54				
	UNITS			DR(0-9)	S8,34,40-44,50-53		MTU	0-9	
CALLED DIGITS A-C (0-9) CALLED IMG OFFICE CODE				A-C(2/5)	S1,00-24	A-C(0-9)	A-G	0-9	
TERMINATING TEST LINE				(DIGITS) D-G,H7(2/5)	S1,30-54 R8,00-04,14	TTL			
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/FT-(2/4)	R1,00-03	FT(0-5)	FT	0-5	
		UNITS		FU-(2/5)	R1,04-13	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,14-23	VG(0-13`	VGU	0-9	VGT1
	HORIZONTAL GROUP			HG-(2/5)	R1,30-34	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,40-44	VF(0-4)	VF	0-4	
CLASS OF SERVICE	30,60,100 CLASSES	TENS		CT-(2/5)	R1,50-52,R2,52,53	CST(0-9)	CST	0-9	
		UNITS		CU-(2/5)	R0,50-54	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	R1,53				
		30-59		CGB	R1,54	CGB			CGB
RATE TREATMENT		TENS 0		CGA	R1,53	CSGA			CSGA
		TENS 1		CGB	R1,54	CSGB			CSGB
		UNITS		CRU-(2/5)	R8,50-54,R7,54	CRU(0-9)	CRU	0-9	
TRUNK LINK	FRAME	TENS		FS(0-29)	SA0,00-54	FG(0-2)			FG(0-2)
		UNITS				FS(0-9)	FS	0-9	
			2			FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS(0-19)	RA8,00-34	TS(10-19)			
		UNITS				TS(0-9)	TSU	0-9	
			2			TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA	R6,13	GPA			CPA
	GROUP B			GPB	R6,14	GPB			CPB
OUTGOING SENDER			5			OSS			OSS
	SENDER GROUP	TENS	4	OGT/T-(0-1)	R4,0-1	SG(0-10)			SGT
		UNITS		OSG/U-(2/5)	R4,2-4,10,11		SG	0-10	
	GROUP A			SSA	R4,12	SGA			SGA
	GROUP B			SSB	R4,13	SGB			SGB
	SENDER			OS(0-4)	R3,10-14	OS(0-4)	OS	0-4	
CHANNEL				CH(0-9)	RA5,10-24	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	RA5,53,54	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	RA6,20-24	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	RA,GS(1-5)	S6,21,R6,00-04	RA(0-3)	RAU	0-9	RAT1
OBSERVED CALL				OBS	S2,21	OBS			OBS

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTERMARKER GROUP TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS NOT OPERATED, THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON F708 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. SG KEY OR SWITCH IS LOCATED ON A AMRST PANEL AND IS USED ON A IMS SENDER TYPE OF TEST (F710) TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND OS- KEY OR SWITCH.
6. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.
7. OBSERVE DRTO/1 AND PRO-9 AND CONSULT OFFICE RECORDS TO DETERMINE WHETHER RECORD WAS PRODUCED BY A COMPLETING OR DIAL TONE MARKER.

SIMULATION OF INTERMARKER GROUP
CALLS WHICH PRODUCE 1/X DOUBLE SIDED
TROUBLE RECORD CARDS (E4393)

ISSUE 5
DWG SIZE 6S

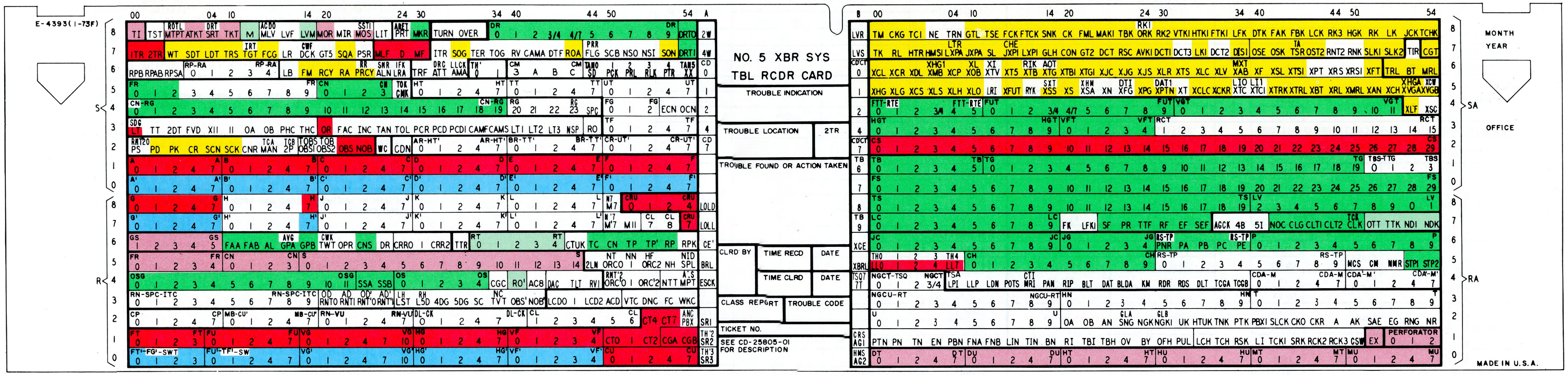
SFD-10-01- F704 BELL LABORATORIES

SFD-10-01-F704

🟪 MISCELLANEOUS
🟥 INPUT TO MARKER
🟩 CIRCUIT PATHS USED
🟦 OUTPUT FROM MARKER TO INTERMARKER GROUP SENDER
🟨 PROGRESS AND TROUBLE INDICATIONS
🟩 DESIGNATIONS WHICH MAY BE PERFORATED UNDER VARIOUS CONDITIONS

COMPLETING MARKER
CALLING MARKER GROUP
INTERMARKER GROUP CALL
I/X DOUBLE SIDED TROUBLE CARD

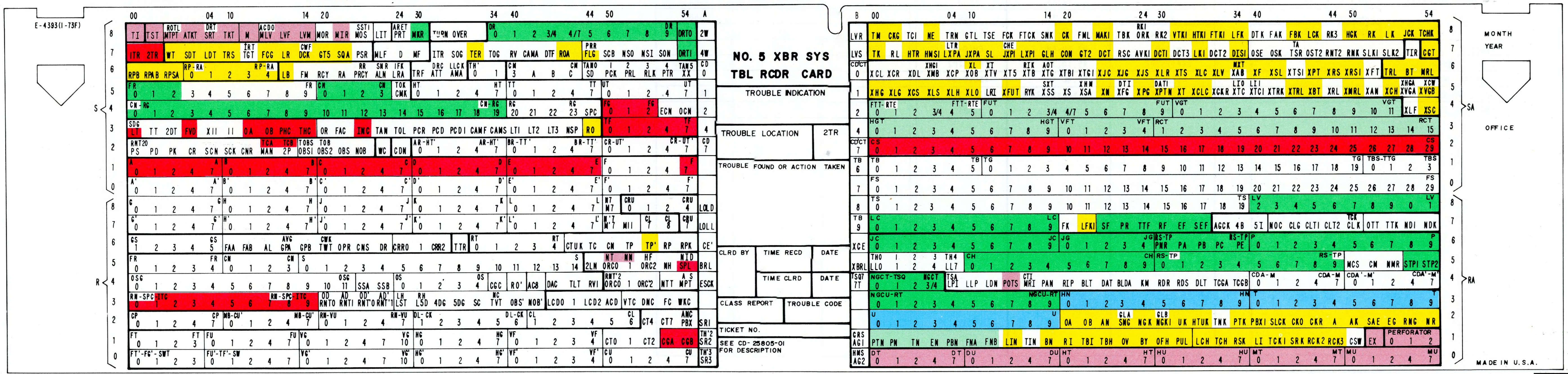
SEE NOTE 1



🟪 MISCELLANEOUS
🟥 INPUT TO MARKER
🟩 CIRCUIT PATHS USED
🟦 OUTPUT FROM MARKER TO NUMBER GROUP
🟨 PROGRESS AND TROUBLE INDICATIONS
🟩 OUTPUT FROM NUMBER GROUP TO MARKER

COMPLETING MARKER
CALLING MARKER GROUP
INTERMARKER GROUP CALL
I/X DOUBLE SIDED TROUBLE CARD

SEE NOTE 2



SHEET NOTES:

1. IF TROUBLE CARD INDICATES THE RECORD WAS MADE IN CALLING MARKER GROUP, USE SIMULATION CHART ON FACING PAGE TO SIMULATE TROUBLE RECORD.
2. IF TROUBLE CARD INDICATES THE RECORD WAS MADE IN THE CALLED MARKER GROUP, REFER TO SIMULATION CHART FOR TERMINATING CALL (SFD-10-01-D904) TO SIMULATE TROUBLE RECORD.

ISSUE 5

NO 5 CSBR I/X DOUBLE SIDED TROUBLE RECORD CARD (E4393) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON AN INTERMARKER GROUP CALL

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SFD-10-01-F705

PRINTED IN U.S.A.

SFD-10-01-F705
7 SHEETS, SHEET 1

E-7421 (10-71)

SINGLE SIDED I/X TROUBLE RECORD CARD (E3638)						KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				SOG	S7,7	IAO	TSTB	IAO	
CLASS OF CALL		ORIG		OR	S4,9		CL	OR-DP/MF	
TRANSLATOR CLASS		LT		LT	S4,0		TRNA	LT	
MARKER			7	MKR	S8,15	MT(0-11)			
		TENS		DRT-	S7,19,20				MTTI
		UNITS		DR-	S8,19-28		MTU	0-9	
CALLED DIGITS A-C (0-9) CALLED IMG OFFICE CODE				A-C(2/5)	S0,0-14	A-G(0-9)	A-C	0-9	
TERMINATING TEST LINE				(DIGITS) D-G,H7(2/5)	S0,15-29 R7,0-4,9	TTL			
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/FT-(2/4)	R1,0-3	FT(0-3)	FT	0-3	
		UNITS		FU-(2/5)	R1,4-8	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,9-14	VG(0-13)	VGU	0-9	VGTI
	HORIZONTAL GROUP			HG-(2/5)	R1,15-19	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,20-24	VF(0-4)	VF	0-4	
CLASS OF SERVICE	30 OR 60 CLASSES	TENS		CT-(1/3)	R1,25-27	CST(0-9)	CST	0-9	
		UNITS		CU-(2/5)	R0,25-29	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	S3,42				
		30-59		CGB	S3,43	CGB			CGB
TRUNK LINK	FRAME	TENS		FS(0-19)	S1,30-49	FG(0,1)			FG(0,1)
		UNITS				FS(0-9)	FS	0-9	
			2			FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS (0-19)	S0,30-39	TS(10-19)			TSTI
		UNITS				TS(0-9)	TSU	0-9	
			2			TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA	R5,38	GPA			GPA
	GROUP B			GPB	R5,39	GPB			GPB
OUTGOING SENDER			5			OSS			OSS
	SENDER GROUP	TENS	4	OGT/T-(0-1)	R4,0-1	SG(0-10)			SGT
		UNITS		OSG/U-(2/5)	R4,2-4,10,11		SG	0-10	
	GROUP A			SSA	R4,12	SGA			SGA
	GROUP B			SSB	R4,13	SGB			SGB
	SENDER			OS (0-4)	R3,10-14	OS(0-4)	OS	0-4	
CHANNEL				CH(0-9)	R7,50-59	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	R5,30,31	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	R6,40-44	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	RA,GS(1-5)	S8,54,R5,32-36	RA(0-3)	RAU	0-9	RATI
OBSERVED CALL				OBS	S3,8	OBS			OBS

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTERMARKER GROUP TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED. THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON F708 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. SG KEY OR SWITCH IS LOCATED ON A AMRST PANEL AND IS USED ON A IMS SENDER TYPE OF TEST (F710) TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND OS- KEY OR SWITCH.
6. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.
7. OBSERVE DRT0/1 AND DR0-9 AND CONSULT OFFICE RECORDS TO DETERMINE WHETHER RECORD WAS PRODUCED BY A COMPLETING OR DIAL TONE MARKER.

SIMULATION OF INTERMARKER GROUP
CALLS WHICH PRODUCE I/X
SINGLE SIDED TROUBLE RECORD
CARDS (E3638)

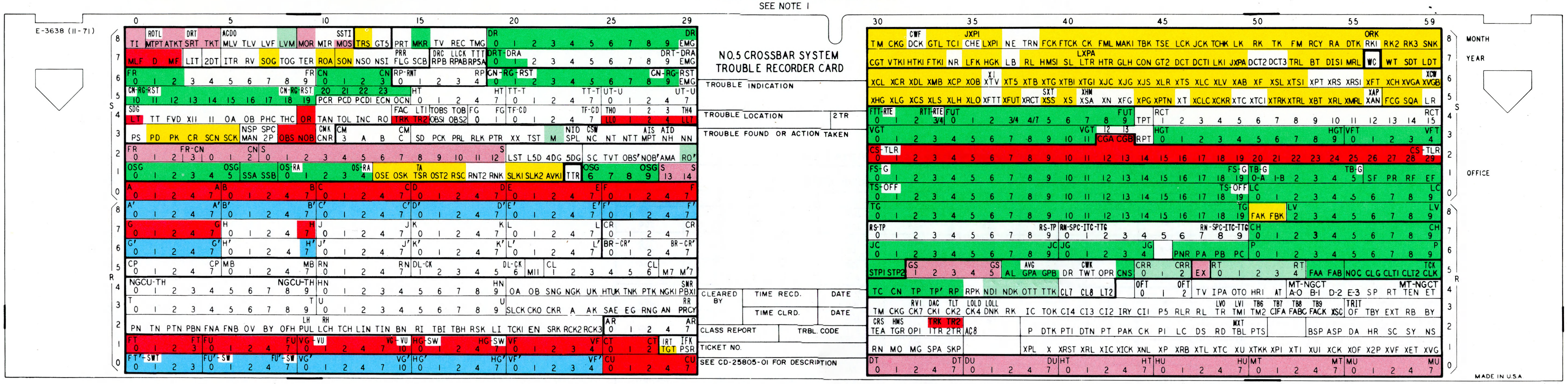
ISSUE 5
DWG SIZE 6S

SFD-10-01- F706
BELL LABORATORIES

- 🟪 MISCELLANEOUS
- 🟥 INPUT TO MARKER
- 🟩 CIRCUIT PATHS USED
- 🟦 OUTPUT FROM MARKER TO INTERMARKER GROUP SENDER
- 🟨 PROGRESS AND TROUBLE INDICATIONS
- 🟩 DESIGNATIONS WHICH MAY BE PERFORATED UNDER VARIOUS CONDITIONS

COMPLETING MARKER
CALLING MARKER GROUP
INTERMARKER GROUP CALL
I/X SINGLE SIDED TROUBLE CARD

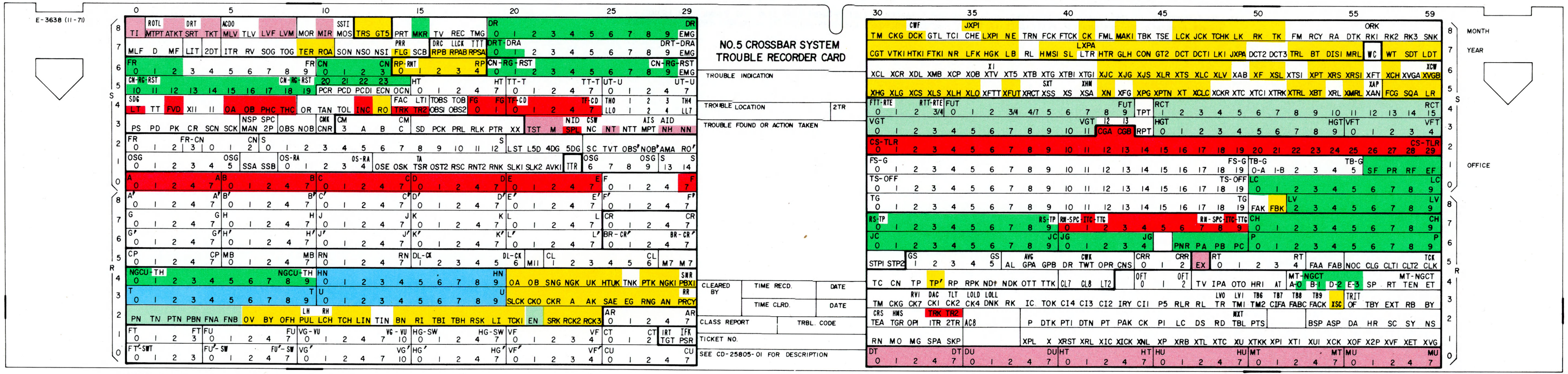
SEE NOTE 1



- 🟪 MISCELLANEOUS
- 🟥 INPUT TO MARKER
- 🟩 CIRCUIT PATHS USED
- 🟦 OUTPUT FROM MARKER TO NUMBER GROUP
- 🟨 PROGRESS AND TROUBLE INDICATIONS
- 🟩 OUTPUT FROM NUMBER GROUP TO MARKER

COMPLETING MARKER
CALLING MARKER GROUP
INTERMARKER GROUP CALL
I/X SINGLE SIDED TROUBLE CARD

SEE NOTE 2



SHEET NOTES:

1. IF TROUBLE CARD INDICATES THE RECORD WAS MADE IN THE CALLING MARKER GROUP, USE SIMULATION CHART ON FACING PAGE TO SIMULATE TROUBLE RECORD.
2. IF TROUBLE CARD INDICATES THE RECORD WAS MADE IN THE CALLED MARKER GROUP, REFER TO SIMULATION CHART FOR TERMINATING CALL (SFD-10-01-D906) TO SIMULATE TROUBLE RECORD.

ISSUE 5

NO 5 CSBR I/X SINGLE SIDED TROUBLE RECORD CARD (E3638) INDICATING DESIGNATIONS INTERMARKER GROUP CALL

SFD-10-01-F707

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SFD-10-01-F707
7 SHEETS, SHEET 1

E-7421 (10-71)

JUNCTOR SUBGROUP SELECTED (JG- DESIGNATION PERFORATED)

NUMBER OF TRUNK LINK FRAMES			JUNCTOR STEP POSITION (STP1 OR STP2)	JUNCTOR SEQUENCE (JSQ-)					
SINGLE	PAIRED	TRIPLED		0	1	2	3	4	5
2	4	6	1	JG0	JG1	JG2	JG0	JG1	JG2
			2	JG3	JG4	JG3	JG4	JG3	JG4
2-3	4-6	6-9	1	JG0	JG1	JG2	JG0	JG1	JG2
			2	JG1	JG2	JG0	JG1	JG2	JG0
3	6	9	1	JG0	JG1	JG2	JG0	JG1	JG2
			2	JG3	JG3	JG3	JG3	JG3	JG3
4	8	12	1	JG0	JG1	JG0	JG1	JG0	JG1
			2	JG2	JG2	JG2	JG2	JG2	JG2
5	10	15	1	JG0	JG1	JG0	JG1	JG0	JG1
			2	JG1	JG0	JG1	JG0	JG1	JG0
6	12	18	1	JG0	JG0	*JG0/1	JG0	JG0	**JG0/1
			2	JG1	**JG1/2	**JG0/1	**JG1/2	JG1	**JG0/2
7	14	21	1	JG0	JG0	JG0	JG0	JG0	**JG0/1
			2	JG1	**JG1/2	JG1	**JG1/2	JG1	**JG0/2
8	16	24	1	JG0	JG0	JG0	JG0	JG0	JG0
			2	JG1	JG1	JG1	JG1	JG1	JG1
9	18	27	1	JG0	JG0	JG0	JG0	JG0	JG0
			2	JG1	JG1	JG1	JG1	JG1	JG1
10	20	30	1	JG0	JG0	JG0	JG0	JG0	JG0

* JG0 DESIGNATION PERFORATED IF THREE JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.
JG1 DESIGNATION PERFORATED IF TWO JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.

** LOWER-NUMBERED JG- DESIGNATION PERFORATED IF TWO JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.
HIGHER-NUMBERED JG- DESIGNATION PERFORATED IF THREE JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.

ISSUE	DWG SIZE	
5	6S	CORRELATION BETWEEN JUNCTOR GROUP, JUNCTOR STEP, AND JUNCTOR SEQUENCE SELECTION
SFD-10-01-	F708	BELL LABORATORIES

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT						KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD			
FUNCTION			SEE NOTE	TTY OUTPUT		KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				50G		IAO	TSTB	IAO	
CLASS OF CALL		ORIG		OR			CL	OR-DP/MF	
TRANSLATOR CLASS		LT		LT			TRNA	LT	
MARKER									
		TENS				MT(0-11)			MTTI
		UNITS					MTU	0-9	
CALLED DIGITS A-C 0-9 CALLED IMG OFFICE CODE				DIG. A-C(2/5)		A-C 0-9	A-C	0-9	.3
TERMINATING TEST LINE				(DIGITS) D-G,H7(2/5)		TTL			
LINE LOCATION	FRAME	TENS	1	FT.X		FT(0-5)	FT	0-5	
		UNITS		FU.X		FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG.XX		VG(0-13)	VGU	0-9	VGTI
	HORIZONTAL GROUP			HG.X		HG(0-9)	HG	0-9	
	VERTICAL FILE			VF.X		VF(0-4)	VF	0-4	
CLASS OF SERVICE	30,60, OR 100 CLASSES	TENS		CT.X		CST(0-9)	CST	0-9	
		UNITS		CU.X		CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA					
		30-59		CGB		CGB			CGB
RATE TREATMENT		TENS 0		CGA		CSGA			CSGA
		TENS 1		CGB		CSGB			CSGB
		UNITS		CRU.X		CRU(0-9)	CRU	0-9	
TRUNK LINK	FRAME	TENS		FS.XX		FG(0-2)			FG(0-2)
		UNITS				FS(0-9)	FS	0-9	
			2			FS OR NTFS			FS OR NTFS
TRUNK		TENS		TS.XX		TS(10-19)			TSTI
		UNITS				TS(0-9)	TSU	0-9	
			2			TS OR NTTS			TS OR NTTS
TRUNK ALLOTTER	GROUP A			GPA		GPA			GPA
	GROUP B			GPB		GPB			GPB
OUTGOING SENDER			5			OSS			OSS
	SENDER GROUP	TENS	4	OGT/T-(0-1)	R4,0-1	.SG(0-10)			SGT
		UNITS		OSG/U-(2/5)	RA,2-4,10,11		SG	0-10	
	GROUP A			SSA	R4,12	SGA			SGA
	GROUP B			SSB	R4,13	SGB			SGB
	SENDER			OS (0-4)	R3,10-14	OS(0-4)	OS	0-4	
CHANNEL				CH.X		CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2		STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG.X		JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	GS.X		RA(0-3)	RAU	0-9	RATI
OBSERVED CALL				OBS		OBS			OBS

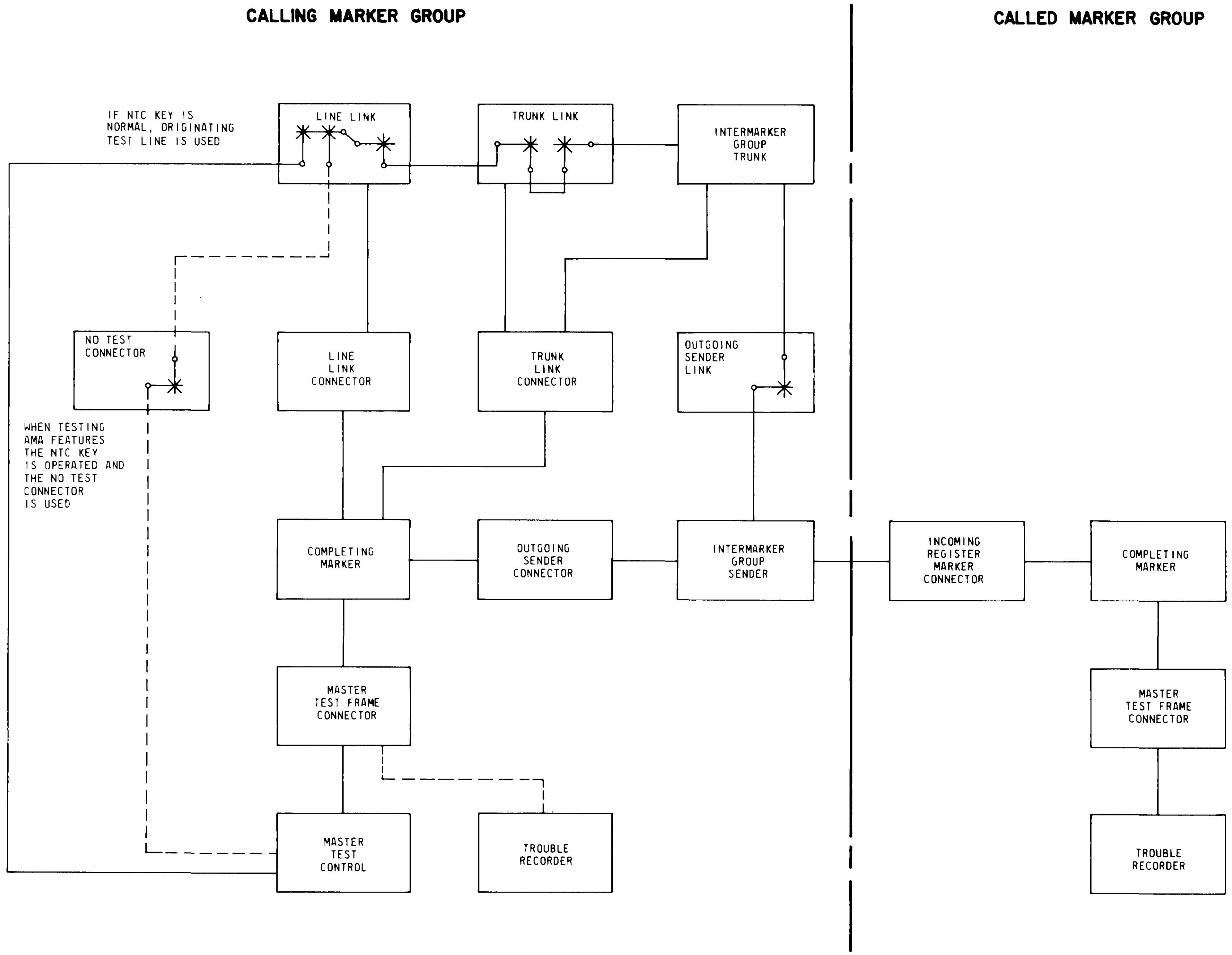
SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN INTERMARKER GROUP TRUNK. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED. THE NO-TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON F708 FOR SETTING OR JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. SG KEY OR SWITCH IS LOCATED ON A AMRST PANEL AND IS USED ON A IMS SENDER TYPE OF TEST (F710) TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND OS- KEY OR SWITCH.
6. THE GSI-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.

SIMULATION OF INTERMARKER GROUP CALLS
WHICH PRODUCE AN AUTOMATIC TROUBLE
ANALYSIS EXCEPTION REPORT

DWG SIZE 6S
ISSUE 5

BELL LABORATORIES
SFD-10-01-
F709



SD-25800-01

SEE NOTE	FIG.OR OPT	KEY OR SWITCH	FUNCTION
1,2	4,KX	A-C (0-9) KEY	CALLED DIGITS (A-C) PRIMES THE MARKER WITH THE THREE DIGIT INTERMARKER GROUP OFFICE CODE.
	4KZL, ZVM	A-C SW (0-9)	
1,2	4,KX	D(0-9) KEY	CALLED DIGITS (D-G) PRIMES THE MARKER WITH THE CALLED DIGITS.
	4,KY	E(0-9) KEY	
	4,KZ	F(0-9) KEY	
	4,JA	G(0-9) KEY	
	4,ZVL, ZVM	D-G SW (0-9)	
1	8, 35	OSS KEY	OUTGOING SENDER SELECTION WITH THE SGA/SGB KEY OPERATED, DIRECTS THE MARKER TO CONNECT TO THE A OR B SUBGROUP OF SENDERS WITHOUT FIRST TESTING FOR AN IDLE SENDER.
1,2	8, 35	SGA/ SGB KEY	SENDER SUBGROUP A/SENDER SUBGROUP B WITH THE OSS KEY ALSO OPERATED, DIRECTS THE MARKER TO CONNECT TO THE A OR B SUBGROUP OF SENDERS WITHOUT FIRST TESTING FOR IDLE SENDERS.
1,2	8, 83	OS (0-4) KEY	OUTGOING SENDER SELECTS A PARTICULAR SENDER WITHIN A SUBGROUP.
	84	OS SW (0-4)	
1,2	7,XA, XB,ZG	CST (0-2) KEY	CLASS OF SERVICE TENS CONTROLS THE CLASS-OF-SERVICE TENS DIGIT TRANSMITTED TO THE MARKER.
	7,XB	CST (0-9) KEY	
	7,JF	CST SW (0-9)	
1,2	7,JH, RY	CSU (0-9) KEY	CLASS OF SERVICE UNITS CONTROLS THE CLASS-OF-SERVICE UNITS DIGIT TRANSMITTED TO THE MARKER.
	7,JF	CSU SW (0-9)	
1,2	37, GC,GD	CGB KEY (OPR/N-OPR)	CLASS GROUP B USED WHEN OFFICE HAS A MAXIMUM OF 60 CLASSES OF SERVICE. SELECTS CLASS GROUP A WITH KEY IN NORMAL POSITION.
		NONE	
1,2	7,JI	CRU (0-9) KEY	CUSTOMER RATE TREATMENT UNITS PROVIDES RATE TREATMENT INFORMATION TO MARKER.
	7,JF	CRU SW (0-9)	
		NONE	NO RATE TREATMENT REQUIRED.
1,2	7,ED	CSGA/ CSGB KEY	RATE TREATMENT GROUP A AND B CONTROLS THE RATE TREATMENT GROUP INDICATION TO MARKER.
		NONE	NO RATE TREATMENT REQUIRED.
1	1	ST/RL KEY	START AND RELEASE OPERATED TO ST INITIATES A TEST CALL. OPERATED TO RL CAUSES TEST CALL AND ALL ASSOCIATED CIRCUITS TO RELEASE.
3	13	ND KEY	NO DIGITS OPERATE TO PREVENT CALLING MARKER GROUP FROM CONNECTING TO CALLED MARKER GROUP.
3	17	ROT KEY	REORDER TEST SETS UP REORDER IN THE SENDER
2	9	GPA/GPB KEY	ALLOTTER GROUP A AND B USED ON TESTS REQUIRING THE MARKER TO USE A ROUTE WHICH HAS ALLOTTED TRUNK GROUPS.

SD-25800-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
1	69, QL	IMS KEY	INTERMARKER GROUP SENDER TEST PREPARES THE MTC FOR DIRECTING A MARKER TO ESTABLISH A CONNECTION FROM THE MTC TO AN INTERMARKER GROUP TRUNK AND TO ASSOCIATE THE TRUNK WITH THE PARTICULAR INTERMARKER GROUP SENDER TO BE TESTED.
	74	TSTA SW (IMS)	
1,2	19,21	MT (0-11) KEY	MARKER TEST DIRECTS THE MTFC TO CONNECT THIS TEST CIRCUIT (MTC) TO THE MARKER CORRESPONDING TO NUMBER OPERATED.
	52	MT SW (0-11)	
	81	MTU SW (0-9)	
		MTTI KEY	

BSP 218-158-501, ISS 5
SD-25800-01 MASTER TEST CONTROL CIRCUIT (MTC)

SHEET NOTES:

1. KEY(S) OR SWITCH(ES) THAT MUST BE OPERATED TO PERFORM THIS CLASS OF TEST.
2. KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD (SEE SFD-C802/C804/C806).
3. KEY(S) OR SWITCH(ES) WHICH MAY BE OPERATED TO CAUSE ADDITIONAL ACTIONS OR TEST VARIATIONS FOR THIS PARTICULAR TEST.

ISSUE
5

SFD-10-01-F710

INTERMARKER GROUP SENDER (IMS)
CLASS OF TEST SUBSCRIBER
TO SUBSCRIBER-CALLING MARKER
GROUP

PRINTED IN U. S. A.

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SD-25800-01

*SEE NOTE	FIG.OR OPT	KEY OR SWITCH	FUNCTION
2	9	FS/ NTFS KEY	FRAME SELECTION/NO TEST FRAME SELECTION PERMITS SELECTION OF A PARTICULAR TRUNK LINK FRAME UNDER CONTROL OF THE FG(0-2) KEYS AND FS(0-9) KEYS OR SWITCH, WITH FS KEY OR WITHOUT NTFS KEY, FIRST TESTING FOR IDLE TRUNKS ON THAT TRUNK LINK FRAME.
2	U	FG (0,1) KEY	TRUNK LINK FRAME GROUP USED IN CONJUNCTION WITH THE FS(0-9) KEYS OR SWITCH WHEN THE FS OR NTFS KEYS ARE OPERATED. INDICATES TENS DIGIT OF TRUNK LINK FRAME NUMBER.
	79	FG (0-2) KEY	
	80	FG (1,2) KEY	FOR FRAME GROUP 0, THE FG KEY SHOULD BE IN THE NORMAL POSITION.
2	U, 79	FS (0-9) KEY	TRUNK LINK FRAME UNITS WITH FS KEY OPERATED, MAKES ALL TRUNK LINK FRAMES EXCEPT THAT CORRESPONDING TO THE OPERATED FS(0-9) ON FG(0-2) KEYS LOOK BUSY.
	80	FS SW (0-9)	
2	9	TS/ NTTS KEY	TRUNK SELECTION/NO TEST TRUNK SELECTION MAKES ALL TRUNKS EXCEPT THE ONE CORRESPONDING TO THE OPERATED TS(0-19) KEYS OR SWITCH LOOK BUSY TO THE MARKER AND IF NTTS KEY IS OPERATED, WILL OPERATE THE TST RELAY IN THE TLF WHICH REMOVES THE PLUGGED-BUSY CONDITION FROM ALL TRUNKS ON THAT TRUNK LINK FRAME.
2	9,KX	TS (0-19) KEY	TRUNK SELECTION MAKES ALL TRUNKS EXCEPT ONE CORRESPONDING TO THE OPERATED TS(0-9) KEY LOOK BUSY TO THE MARKER.
	9,JF	TSU SW (0-9)	TRUNK SELECTION UNITS SAME AS TS (0-19) KEY.
		TSTI KEY	TRUNK SELECTION TENS OPERATED WITH TSU SWITCH SELECTS PARTICULAR TRUNK.
2	9,QE	RA (0-3) KEY	ROUTE ADVANCE ALLOWS THE MARKER TO FIND AN IDLE TRUNK ONLY AFTER IT HAS ROUTE ADVANCED EXACTLY THE NUMBER OF TIMES CORRESPONDING TO KEY OR SWITCH SETTING.
	9,QF	RA SW (0-5)	
	9,IB	RA SW (0-11)	
	9,CG	RAU SW (0-9)	
	9/99, DL	RATI KEY	

* SEE SHEET F702 FOR SHEET NOTES

INTERMARKER GROUP SENDER (IMS)
CLASS OF TEST SUBSCRIBER TO
SUBSCRIBER-CALLING MARKER GROUP

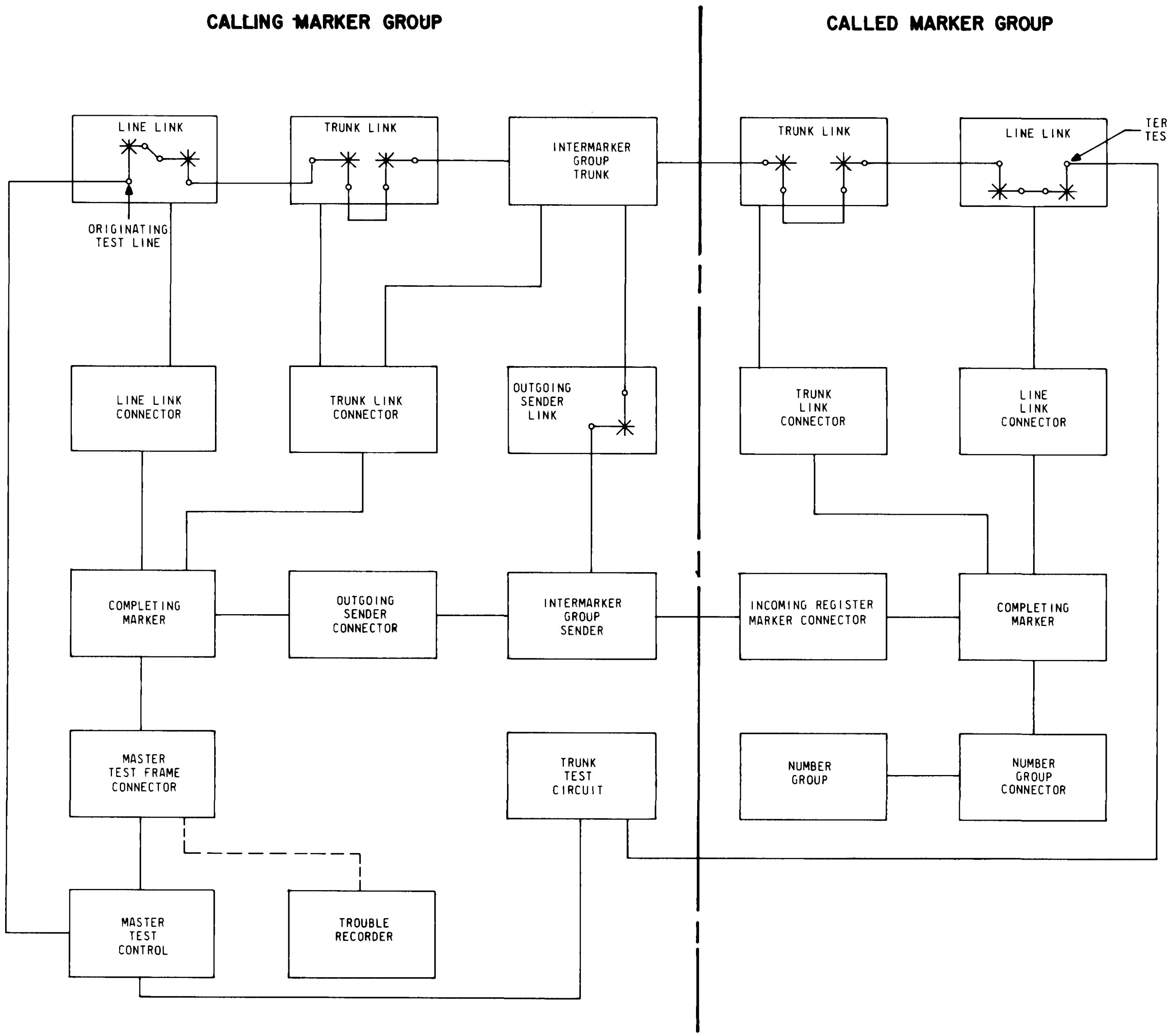
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

ISSUE 5

SFD-10-01-F711

PRINTED IN U.S.A.



BSP 218-249-502, ISS 3
SD-25800-01 MASTER TEST CONTROL CIRCUIT (MTC)
SD-25918-01 TRUNK TEST CIRCUIT (TTC)

SHEET NOTES:

1. KEY(S) OR SWITCH(ES) THAT MUST BE OPERATED TO PERFORM THIS CLASS OF TEST.
2. KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD (SEE SFD-C802/C804/C806).
3. KEY(S) OR SWITCH(ES) WHICH MAY BE OPERATED TO CAUSE ADDITIONAL ACTIONS OR TEST VARIATIONS FOR THIS PARTICULAR TEST.

SD-25800-01

SEE NOTE	FIG.OR OPT	KEY OR SWITCH	FUNCTION
1	68	IAO KEY	INTRAOFFICE CLASS OF TRUNK TEST CAUSES THE TEST CIRCUIT TO CONNECT TO THE TRUNK TEST CIRCUIT AND THEN TO A MARKER THROUGH THE MASTER TEST FRAME CONNECTOR CIRCUIT IN ORDER TO DIRECT THE MARKER TO SET UP A TEST CONNECTION TO THE INTERMARKER GROUP TRUNK UNDER TEST.
	74	TSTB SW (IAO)	
1,2	7,WX	FACD KEY (N-OPR)	ORIGINATING CLASS WITH THE FACD KEY NORMAL OR THE CL SWITCH OPERATED TO OR-DP/MF, INDICATES A HOME AREA CODE.
	11,NQ	CL SW (OR-DP/MF)	
	WW	NONE	

SD-25800-01

SEE NOTE	FIG.OR OPT	KEY OR SWITCH	FUNCTION
1,2	NT,OW	LOCAL TRNSL (ALL KEYS NORMAL)	TRANSLATOR CLASS OPERATE AS REQUIRED TO PRIME MARKER FOR LOCAL TRANSLATION.
	11,NQ	TRNA SW (LT)	
1,2	19,21	MT (0-11) KEY	MARKER TEST DIRECTS THE MTFC TO CONNECT THIS TEST CIRCUIT (MTC) TO THE MARKER CORRESPONDING TO THE NUMBER OPERATED.
	52	MT SW (0-11)	
	81	MTU SW (0-9)	
		MTTI KEY	
1	4,KX	A-C (0-9) KEY	CALLED DIGITS (A-C) PRIMES THE MARKER WITH THE THREE DIGIT INTERMARKER GROUP OFFICE CODE.
	4,ZVL	A-C SW (0-9)	
1	4	TTL KEY	TERMINATING TEST LINE OPERATED ON A TRUNK TEST TO TRANSMIT THE D-G DIGITS OF THE TERMINATING TEST LINE TO THE MARKER.
1,2	7,XA, XB,ZG	CST (0-2) KEY	CLASS OF SERVICE TENS CONTROLS THE CLASS-OF-SERVICE TENS DIGIT TRANSMITTED TO THE MARKER.
	7,XB	CST (0-9) KEY	
	7,JF	CST SW (0-9)	
1,2	7,JH, RY	CSU (0-9) KEY	CLASS OF SERVICE UNITS CONTROLS THE CLASS-OF-SERVICE UNITS DIGIT TRANSMITTED TO THE MARKER.
	7,JF	CSU SW (0-9)	
1,2	37, GC,GD	CGB KEY (OPR/N-OPR)	CLASS GROUP B USED WHEN OFFICE HAS A MAXIMUM OF 60 CLASSES OF SERVICE. SELECTS CLASS GROUP A WITH KEY IN NORMAL POSITION.
		NONE	
1,2	7,JI	CRU (0-9) KEY	CUSTOMER RATE TREATMENT UNITS PROVIDES RATE TREATMENT INFORMATION TO MARKER.
	7,JF	CRU SW (0-9)	
		NONE	NO RATE TREATMENT REQUIRED.
1,2	7,ED	CSGA/ CSGB KEY	RATE TREATMENT GROUP A AND B CONTROLS THE RATE TREATMENT GROUP INDICATION TO MARKER.
		NONE	NO RATE TREATMENT REQUIRED.
1		TLK KEY	TALK USED TO COMPLETE TIP AND RING LEADS TO SIMULATE LINE AT MTF JACK, LAMP, AND KEY CIRCUIT. TLK KEY LOC ON TRUNK TEST PANEL.
1		IMGA/ IMGB KEY	INTERMARKER GROUP A OR B OPERATE DEPENDING UPON WHICH MARKER GROUP THE TERMINATING SIDE OF THE INTERMARKER GROUP TRUNK APPEARS. KEY LOC ON TRUNK TEST PANEL.
1	1	ST/RL KEY	START AND RELEASE OPERATED TO ST INITIATES A TEST CALL. OPERATED TO RL CAUSES TEST CALL AND ALL ASSOCIATED CIRCUITS TO RELEASE.

ISSUE
5

SFD-10-01-F712

INTERMARKER GROUP TRUNK
TEST SUBSCRIBER TO SUBSCRIBER-
CALLING MARKER GROUP

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-F712

SD-25800-01

*SEE NOTE	FIG.OR OPT	KEY OR SWITCH	FUNCTION
2	9,QE	RA (0-3) KEY	ROUTE ADVANCE ALLOWS THE MARKER TO FIND AN IDLE TRUNK ONLY AFTER IT HAS ROUTE ADVANCED EXACTLY THE NUMBER OF TIMES CORRESPONDING TO KEY OR SWITCH SETTING.
	9,QF	RA SW (0-5)	
	9,IB	RA SW (0-11)	
	9,CG	RAU SW (0-9)	
	9/99 DL	RATI KEY	
2	9	GPA/ GPB KEY	ALLOTTER GROUP A AND B USED ON TEST REQUIRING THE MARKER TO USE A ROUTE WHICH HAS ALLOTTED TRUNK GROUPS.
3		ANS KEY	ANSWER WHEN OPERATED TO ANSWER EXTENDS THE TIP AND RING LEADS TOWARD A TERMINATING TEST LINE CONSISTING OF RESISTORS AND RELAYS SIMULATING AN INCOMING TRUNK CIRCUIT. THE RESISTANCE IN THIS LOOP GIVES AN OPERATE TEST TO CALLED PARTY SUPERVISORY RELAY OF THE TRUNK CIRCUITS. ANS KEY LOC ON TTC PANEL.
2	9	FS/ NTFS KEY	FRAME SELECTION/NO TEST FRAME SELECTION PERMITS SELECTION OF A PARTICULAR TRUNK LINK FRAME UNDER CONTROL OF THE FG(0-2) KEYS AND FS(0-9) KEY OR SWITCH, WITH FS KEY OR WITHOUT NTFS KEY, FIRST TESTING FOR IDLE TRUNKS ON THAT TRUNK LINK FRAME.
2	U	FG (0,1) KEY	TRUNK LINK FRAME GROUP USED IN CONJUNCTION WITH THE FS(0-9) KEYS OR SWITCH WHEN THE FS OR NTFS KEYS ARE OPERATED. INDICATES TENS DIGIT OF TRUNK LINK FRAME NUMBER.
	79	FG (0-2) KEY	
	80	FG (1,2) KEY	FOR FRAME GROUP 0, THE FG KEY SHOULD BE IN THE NORMAL POSITION.
2	U, 79	FS (0-9) KEY	TRUNK LINK FRAME UNITS WITH FS KEY OPERATED, MAKES ALL TRUNK LINK FRAMES EXCEPT THAT CORRESPONDING TO THE OPERATED FS(0-9) ON FG(0-2) KEYS LOOK BUSY.
	80	FS SW (0-9)	
2	9	TS/ NTTS KEY	TRUNK SELECTION/NO TEST TRUNK SELECTION MAKES ALL TRUNKS EXCEPT THE ONE CORRESPONDING TO THE OPERATED TS(0-19) KEYS OR SWITCH LOOK BUSY TO THE MARKER AND IF NTTS KEY IS OPERATED, WILL OPERATE THE TST RELAY IN THE TLF WHICH REMOVES THE PLUGGED-BUSY CONDITION FROM ALL TRUNKS ON THAT TRUNK LINK FRAME.
2	9,KX	TS (0-19) KEY	TRUNK SELECTION MAKES ALL TRUNKS EXCEPT ONE CORRESPONDING TO THE OPERATED TS(0-9) KEY LOOK BUSY TO THE MARKER.
	9,JF	TSU SW (0-9)	TRUNK SELECTION UNITS SAME AS TS(0-19) KEY.
		TSTI KEY	TRUNK SELECTION TENS OPERATED WITH TSU SWITCH SELECTS PARTICULAR TRUNK.

* SEE SHEET F704 FOR SHEET NOTES.

ISSUE
5

INTERMARKER GROUP TRUNK
TEST SUBSCRIBER TO
SUBSCRIBER-CALLING MARKER
GROUP

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

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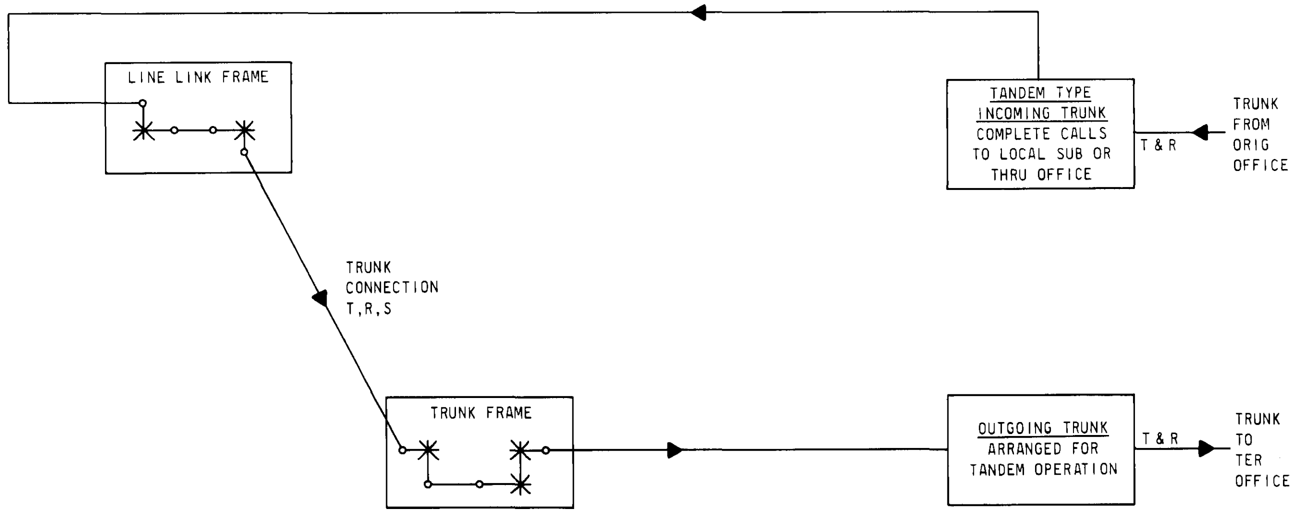
SFD-10-01-F713

E-7481 (10-71)

ESTABLISHING TANDEM SWITCHING CONNECTION



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G001	PART G0 - TANDEM CALL-TROUBLE CARD ANALYSIS.
G002	FLOW CHART FOR ANALYSIS OF TROUBLE CARD FOR TANDEM CALL.
G003	TROUBLE ANALYSIS SEQUENCE CHART TANDEM CALL.

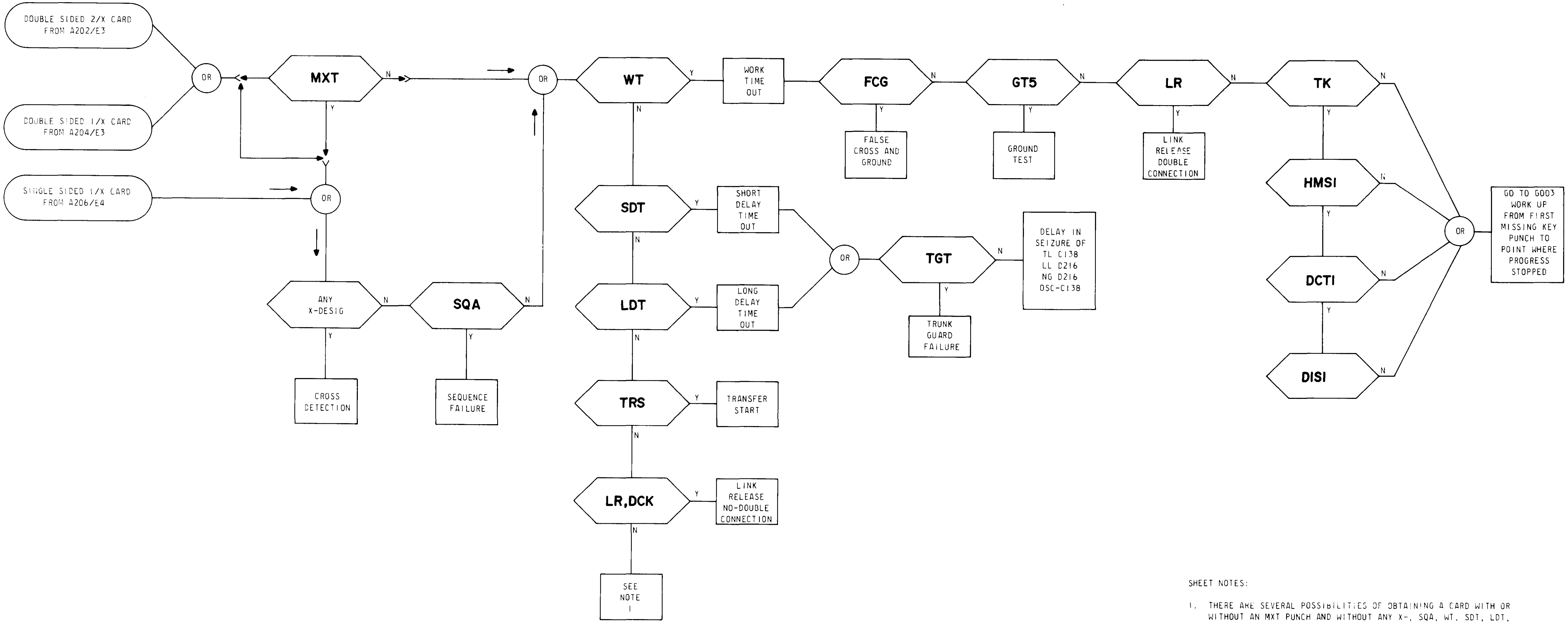
CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G0
TANDEM CALL
TROUBLE CARD ANALYSIS

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES **SFD-10-01-** **G001**


DOUBLE SIDED 2/X CARD FROM A202/E3
DOUBLE SIDED 1/X CARD FROM A204/E3
SINGLE SIDED 1/X CARD FROM A206/E4
OR
MXT
N
Y
OR
ANY X-DESIG
N
Y
CROSS DETECTION
SQA
N
Y
SEQUENCE FAILURE
OR
WT
Y
N
WORK TIME OUT
SDT
Y
N
SHORT DELAY TIME OUT
LDT
Y
N
LONG DELAY TIME OUT
TRS
Y
N
TRANSFER START
LR,DCK
Y
N
LINK RELEASE NO-DOUBLE CONNECTION
SEE NOTE 1
OR
TGT
N
Y
TRUNK GUARD FAILURE
DELAY IN SEIZURE OF TL C138 LL D216 NG D216 OSC-C138
FCG
N
Y
FALSE CROSS AND GROUND
GT5
N
Y
GROUND TEST
LR
N
Y
LINK RELEASE DOUBLE CONNECTION
TK
N
Y
HMSI
N
Y
DCTI
N
Y
DISI
N
OR
GO TO G003 WORK UP FROM FIRST MISSING KEY PUNCH TO POINT WHERE PROGRESS STOPPED

SHEET NOTES:

1. THERE ARE SEVERAL POSSIBILITIES OF OBTAINING A CARD WITH OR WITHOUT AN MXT PUNCH AND WITHOUT ANY X-, SQA, WT, SDT, LDT, OR TRS PUNCHES. THESE INCLUDE:
   - A. A FALSELY OPERATED FTC- RELAY IN A NORMAL MARKER WILL OPERATE MXT RELAY CAUSING A TROUBLE RECORD CARD WITH NO X- OR SQA INDICATION. (ONLY DOUBLE SIDED CARDS WILL SHOW AN MXT PUNCH).
   - B. A MOMENTARY CROSS IN THE JUNCTOR WALKING CIRCUIT WILL OPERATE MXT RELAY CAUSING A RECORD AS IN (A) ABOVE.
   - C. THERE MAY BE MISSING PUNCHES, AS A RESULT OF A DEFECTIVE TROUBLE RECORDER OR DEFECTIVE WIRING OR RELAY CONTACTS IN LEADS TO TROUBLE RECORDER.

ISSUE
5

SFD-10-01-G002

FLOW CHART FOR
ANALYSIS OF TROUBLE CARD
FOR TANDEM CALL

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DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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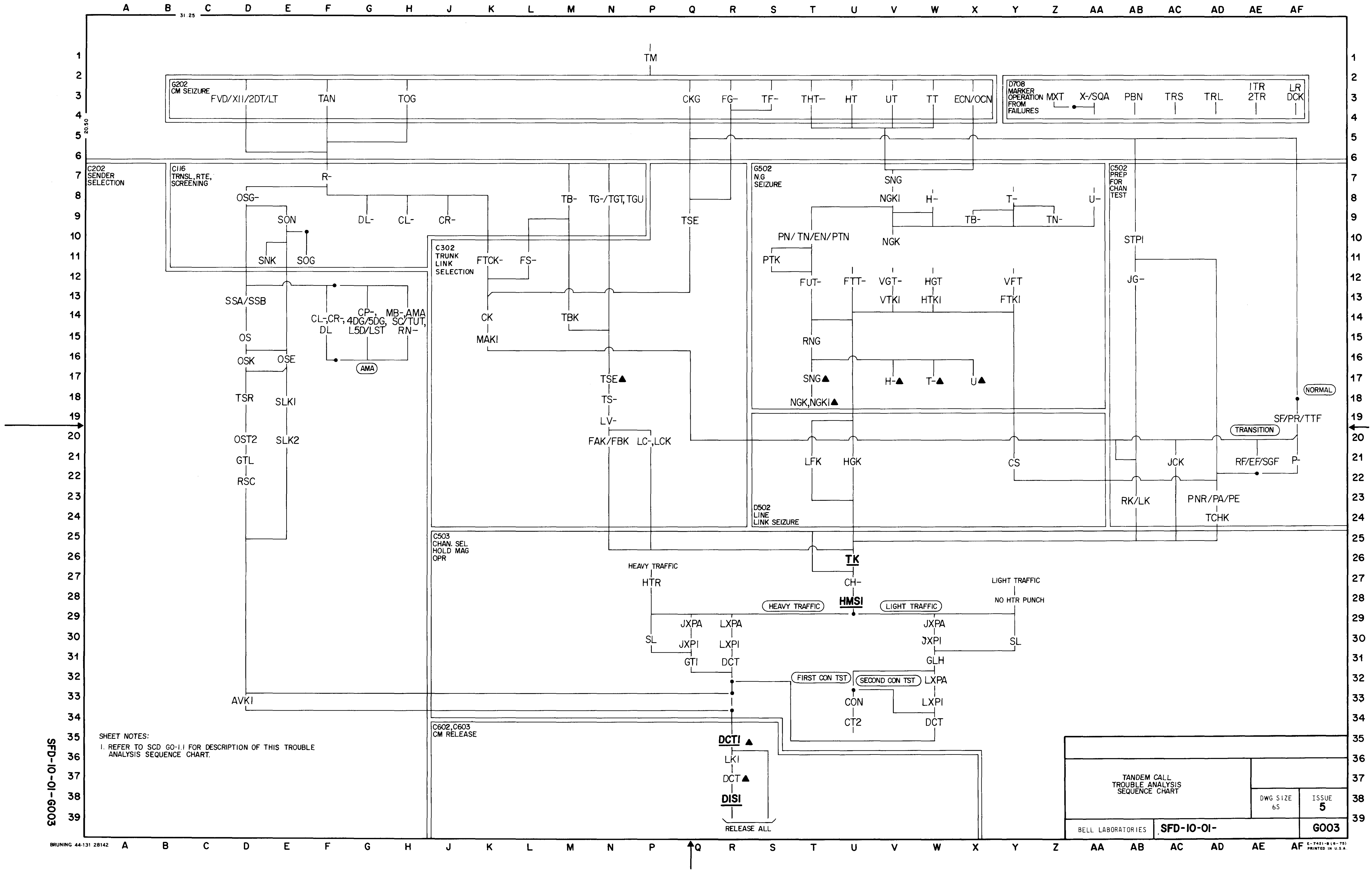

SHEET NOTES:

1. REFER TO SCD GO-1.1 FOR DESCRIPTION OF THIS TROUBLE ANALYSIS SEQUENCE CHART.

TANDEM CALL
TROUBLE ANALYSIS
SEQUENCE CHART

DWG SIZE 6S	ISSUE 5
BELL LABORATORIES SFD-10-01-	G003

SFD-10-01-G003

ESTABLISHING TANDEM SWITCHING CONNECTION

INDEX

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G102	SEQUENCE CHART - MF INCOMING REGISTER SEIZURE AND PULSING
G103	INCOMING REGISTER LINK ARRANGEMENTS
G104	INCOMING REGISTER LINK TRUNK PREFERENCE
G105	ARRANGEMENT OF CHAIN CIRCUITS IN AN IRL FRAME (ALL TEN REGISTERS EQUIPPED WITH ONLY ONE IRL FRAME IN LINK GROUP)
G106	INCOMING REGISTER LINK - REGISTER PREFERENCE
G107	INCOMING REGISTER LINK - REGISTER PREFERENCE
G108	REGISTRATION OF INCOMING TRUNK CLASS INFORMATION IN INCOMING REGISTER (MF)
G109	REGISTRATION OF TRUNK LINK FRAME NUMBER IN INCOMING REGISTER (MF)
G110	REGISTRATION OF TRUNK NUMBER IN INCOMING REGISTER (MF)
G111	REGISTRATION OF TRUNK NUMBER IN INCOMING REGISTER (MF)
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G115	MULTIFREQUENCY INCOMING TANDEM CONNECTION PULSING AND TALKING PATH
G116	MULTIFREQUENCY INCOMING REGISTER SEIZURE AND RECEIPT OF MULTIFREQUENCY TONES
G117	MULTIFREQUENCY INCOMING REGISTER DIGIT REGISTRATION AND STEERING CONTROL
G118	INCOMING REGISTER TIMING AND MAKE BUSY
G119	STANDING CROSS RELAY TROUBLE INDICATIONS
G120	SELECTION OF INCOMING REGISTER BY AMRST
G121	SELECTION OF INCOMING REGISTER BY AMRST
G122	SEQUENCE CHART - DIAL PULSE INCOMING REGISTER
G123	SEQUENCE CHART - DIAL PULSE INCOMING REGISTER
G124	SEQUENCE CHART - DIAL PULSE INCOMING REGISTER
G125	SEQUENCE CHART - DIAL PULSE INCOMING REGISTER
G126	REGISTRATION OF INCOMING TRUNK CLASS INFORMATION IN INCOMING REGISTER (DP)
G127	REGISTRATION OF TRUNK LINK FRAME NUMBER IN INCOMING REGISTER (DP)
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G134	DIAL PULSE INCOMING REGISTER BYLINK PULSING AND TALKING CONNECTION (SXS TO NO. 5 CROSSBAR)
G135	DIAL PULSE INCOMING REGISTER BYLINK PULSING AND TALKING CONNECTION (SXS TO NO. 5 CROSSBAR)
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G142	MASTER TRAFFIC CONTROL

CAUTION !

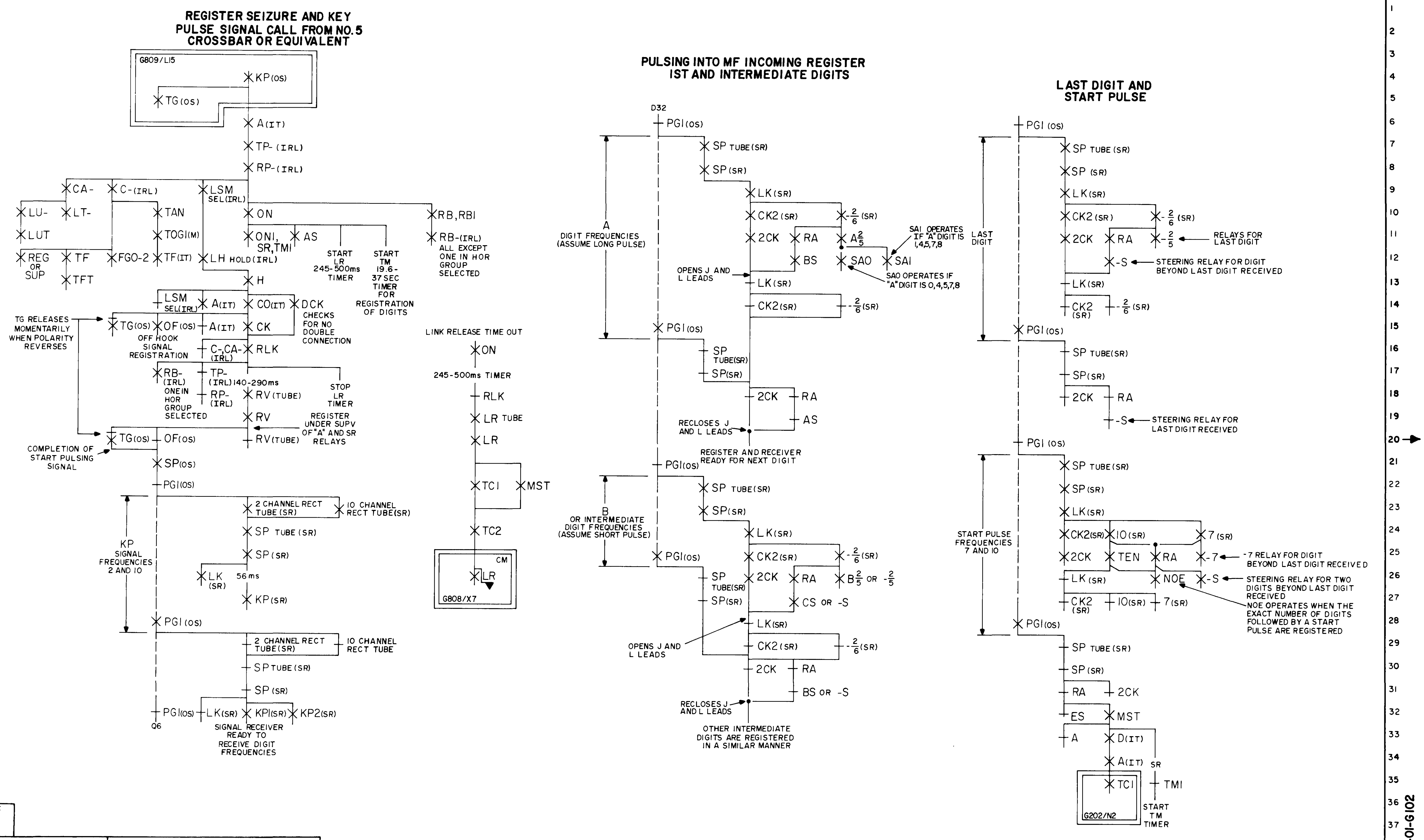
DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G1
INCOMING TANDEM TRUNK SEIZURE,
INCOMING REGISTER SELECTION
AND PULSING

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES
SFD-10-01-
G101

SFD-10-01-G101
2 SHEETS, SHEET 1



ISSUE
5

SFD-10-01-G102

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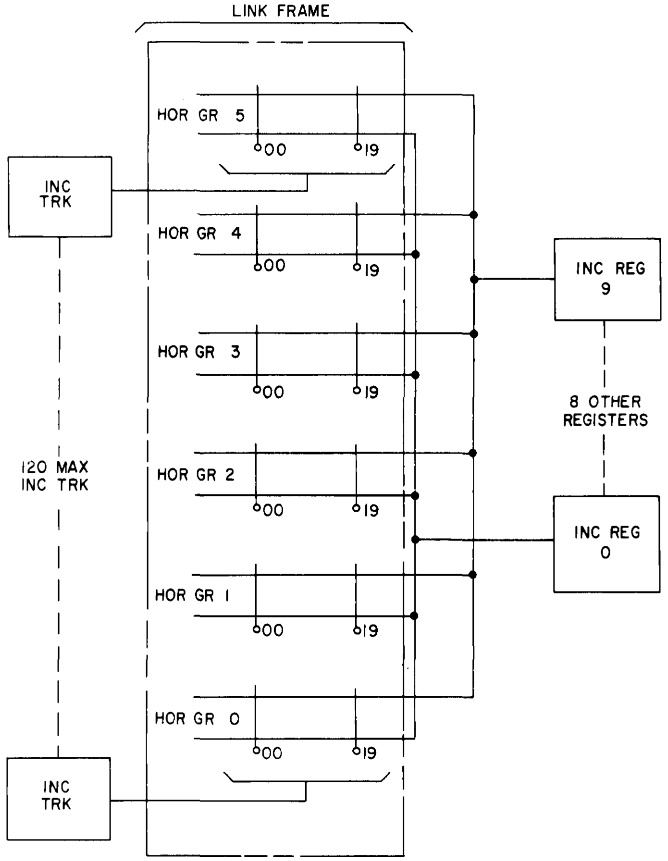
SEQUENCE CHART
MF INCOMING REGISTER SEIZURE
AND PULSING

DWG SIZE 6S

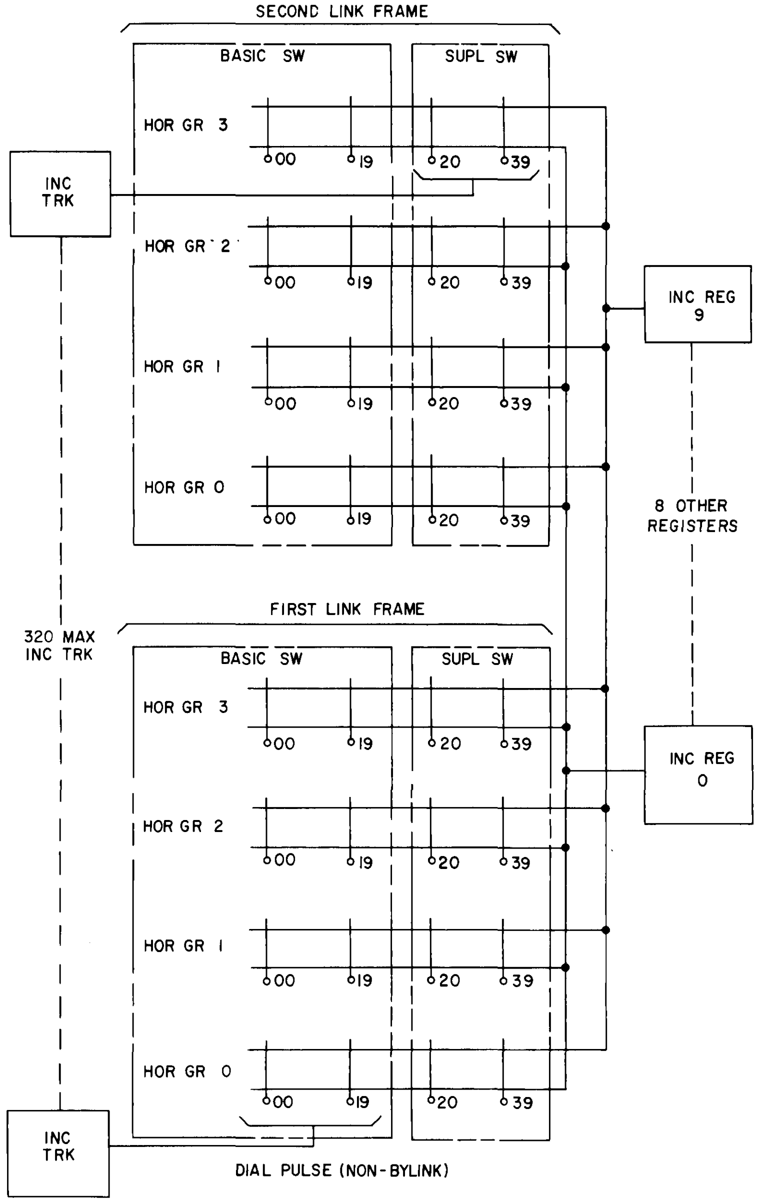
BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

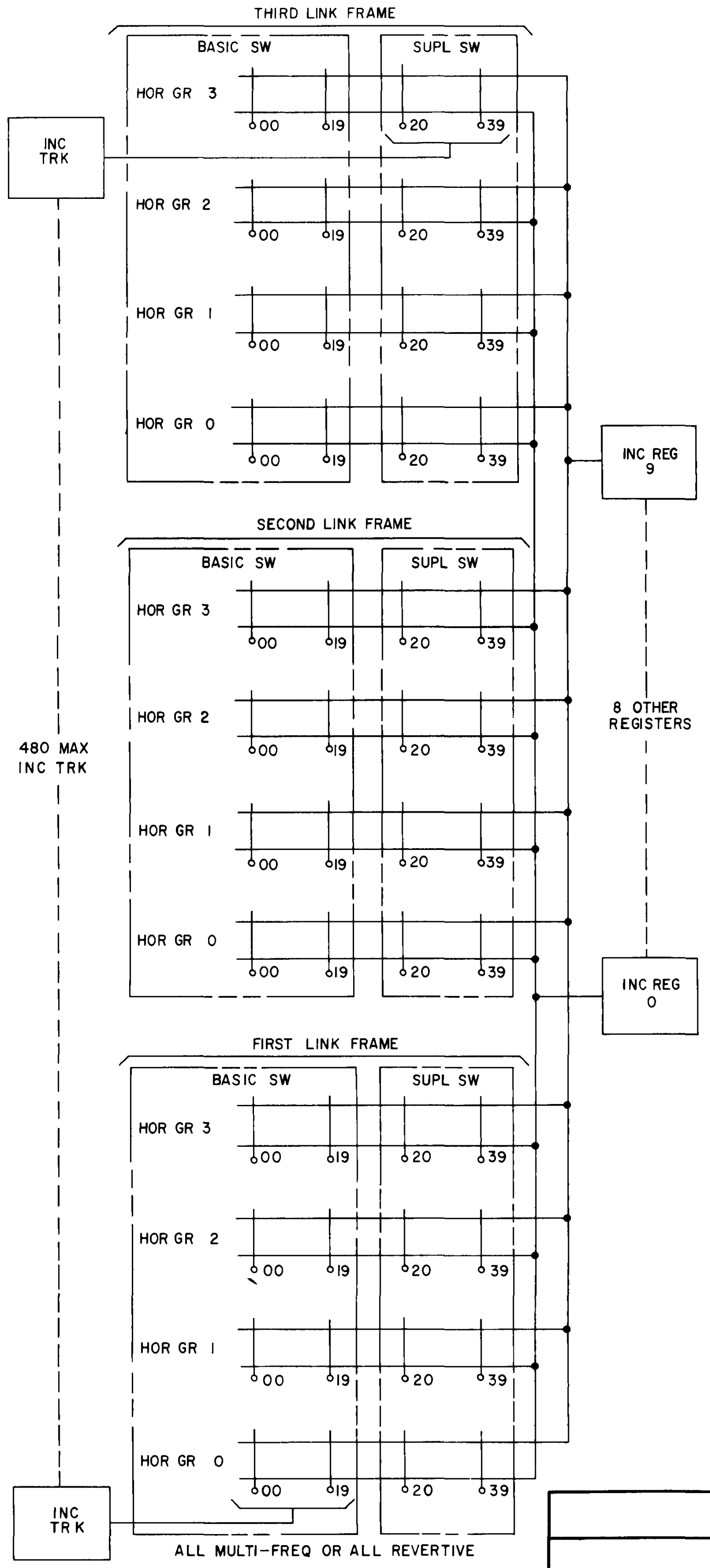
INCOMING REGISTER LINK



DIAL PULSE (BYLINK)
COMB LINK GR (DIAL PULSE & MULTI-FREQ)



DIAL PULSE (NON-BYLINK)



ALL MULTI-FREQ OR ALL REVERTIVE

INCOMING REGISTER LINK
ARRANGEMENTS

DWG SIZE 6S

ISSUE 5

BELL LABORATORIES SFD-10-01- G103

SFD-10-01-G103

K&E 19 1153 6-76 41250•

E-7421 (6-75)
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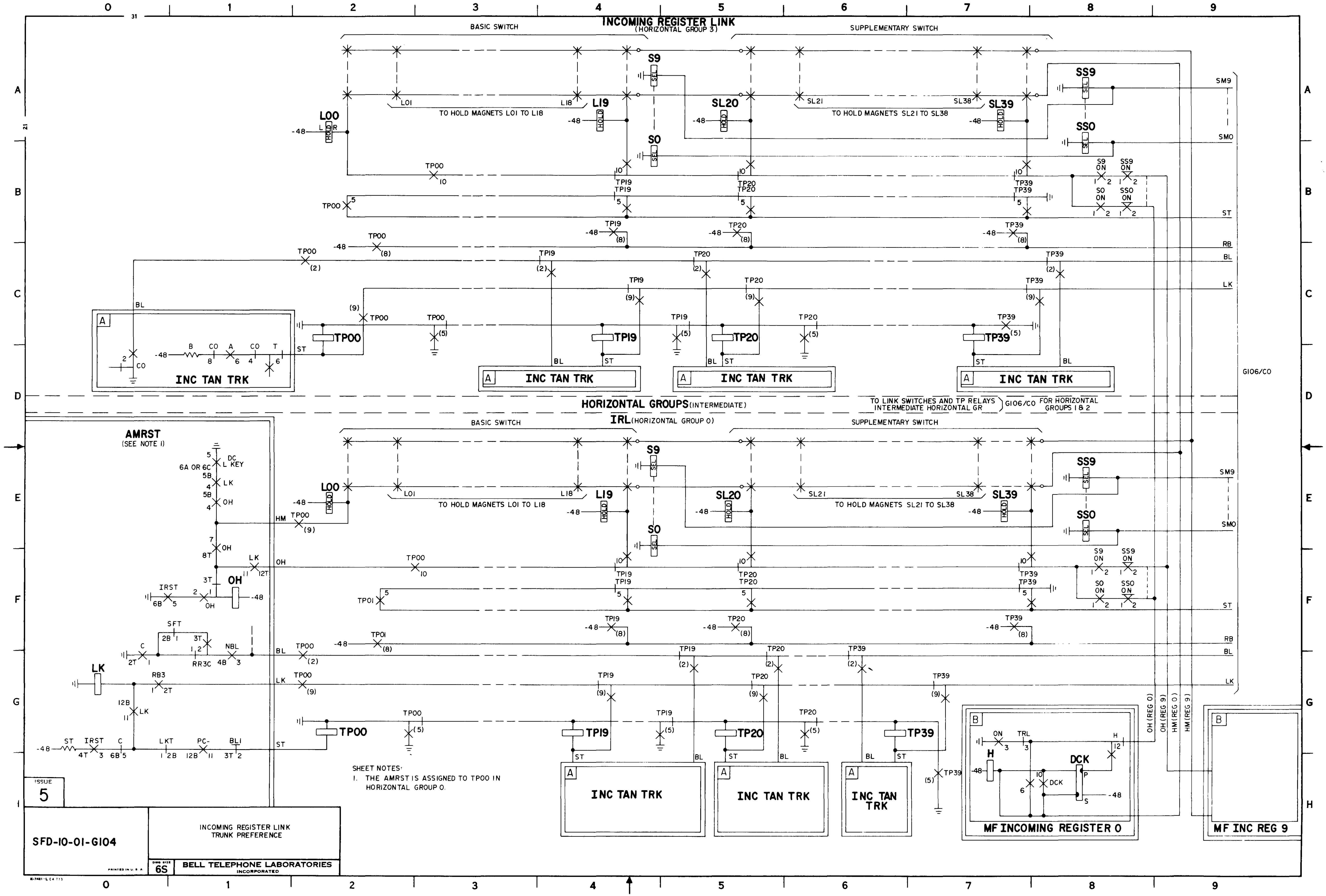

SHEET NOTES:
1. THE AMRST IS ASSIGNED TO TP00 IN HORIZONTAL GROUP 0.

ISSUE
5

SFD-10-01-G104

INCOMING REGISTER LINK
TRUNK PREFERENCE

DWG SIZE 6S

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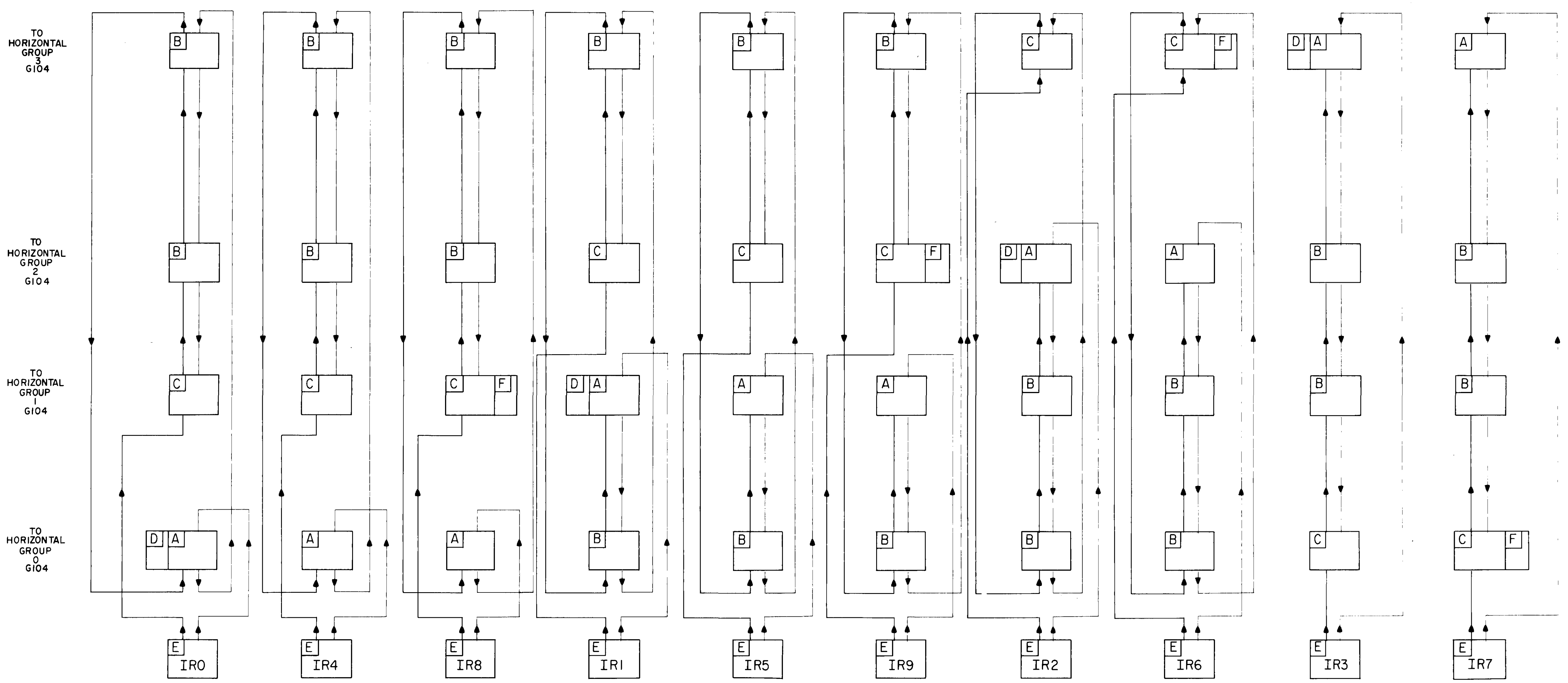
SFD-10-01-G104


TO HORIZONTAL GROUP 3 G104
TO HORIZONTAL GROUP 2 G104
TO HORIZONTAL GROUP 1 G104
TO HORIZONTAL GROUP 0 G104
B
C
D
A
F
E
IR0
IR4
IR8
IR1
IR5
IR9
IR2
IR6
IR3
IR7

SHEET NOTES:

1. FOR ARRANGEMENT OF CHAIN CIRCUITS WITH MORE THAN ONE IRL FRAME IN LINK GROUP SEE SD-26048-01 FS 101.

2. COMBINATIONS OF INCOMING REGISTER LINK BLOCKS DESIGNATED $\boxed{A}$ THRU $\boxed{D}$ AND $\boxed{F}$ SHOWN IN VERTICAL ROWS ARE ASSOCIATED WITH THE INCOMING REGISTER DESIGNATED $\boxed{E}$ AT THE BOTTOM OF EACH VERTICAL ROW. COMBINATIONS OF THE SAME BLOCKS IN HORIZONTAL ROWS ARE ASSOCIATED WITH A HORIZONTAL GROUP.

3. SEE SHEETS G106 & G107 FOR DETAILED SCHEMATICS FOR $\boxed{A}$ THRU $\boxed{F}$

—— WORK CHAIN (LK, BL, SM, TF AND LO LEADS)

- - - PREFERENCE CHAIN (B, B1 AND B2 LEADS)

START CHAIN (ST LEAD)

ARRANGEMENT OF CHAIN CIRCUITS IN AN IRL FRAME (ALL TEN REGISTERS EQUIPPED, WITH ONLY ONE IRL FRAME IN LINK GROUP)	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G105

E-7421 (6-73)
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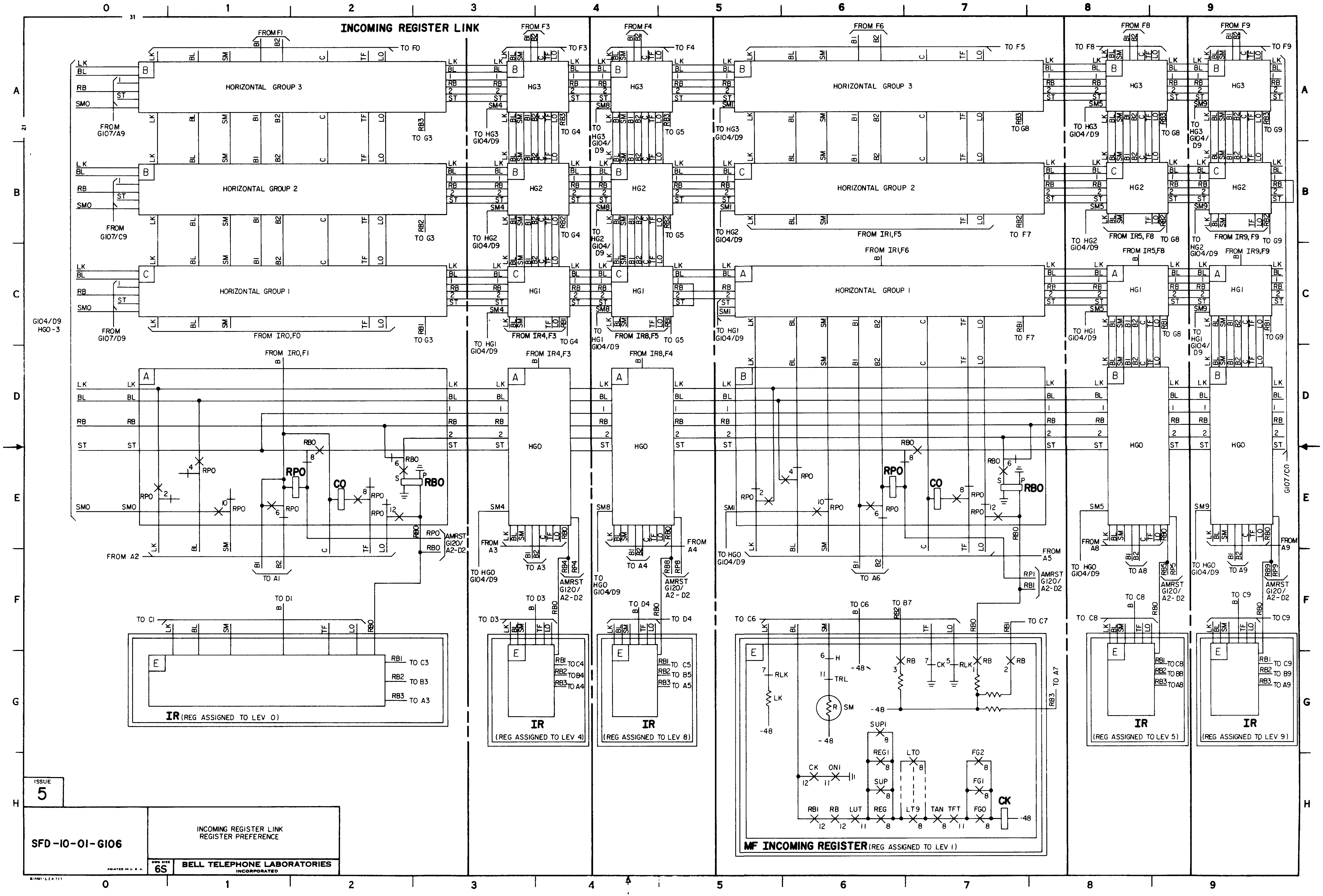
SFD-10-01-G105
4 SHEETS, SHEET 1



ISSUE
5

SFD-10-01-G106

INCOMING REGISTER LINK
REGISTER PREFERENCE

DWG SIZE 6S

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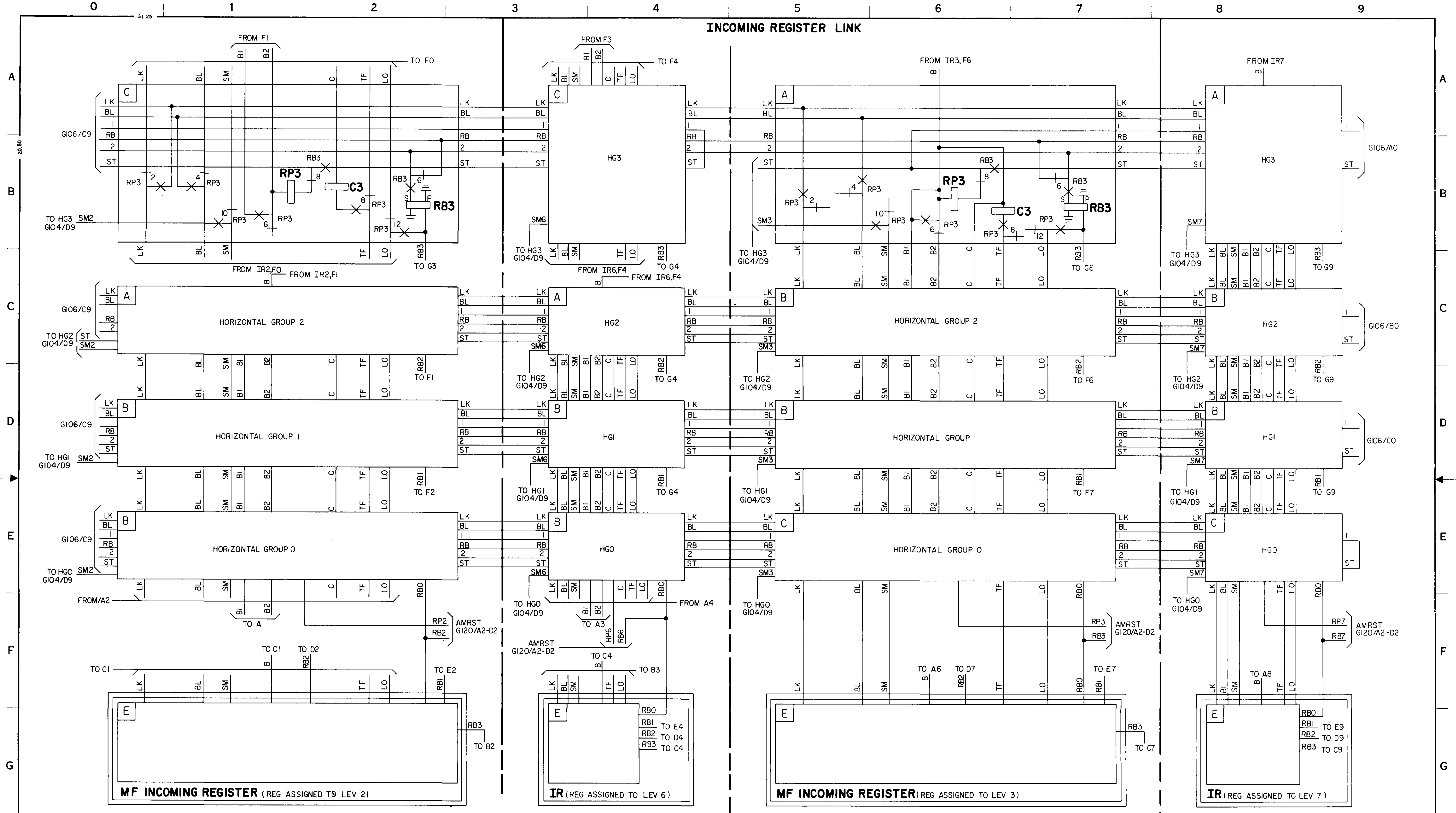
SFD-10-01-G106

SFD-10-01-G107



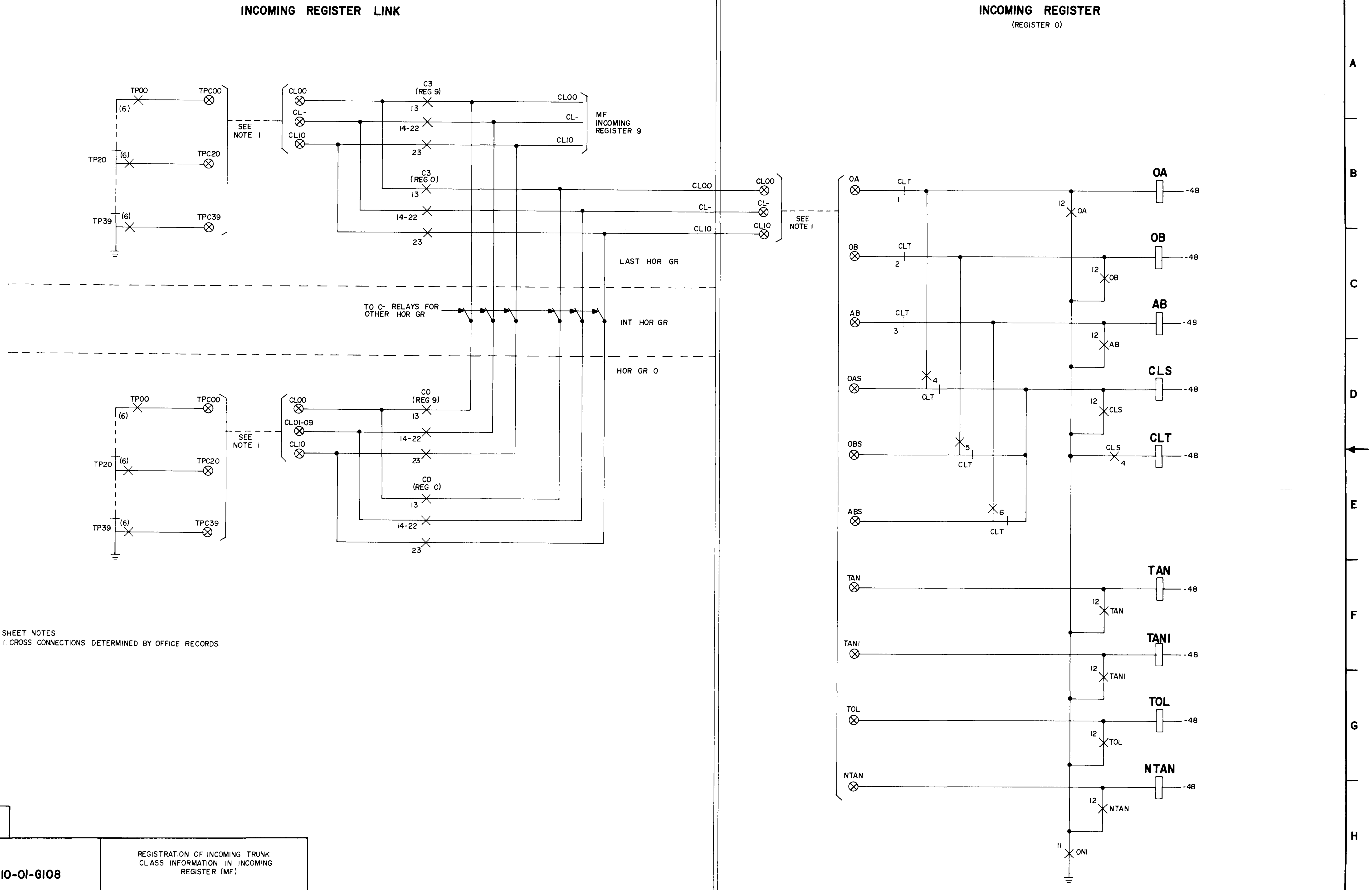
SHEET NOTES:

1. INTERCONNECT ST CHAIN AS SHOWN ON G105. OTHER LEADS MULT TO ALL PREFERENCE BLOCKS (A, B OR C) IN SAME HORIZONTAL GROUP.
2. BLOCK "A" REPRESENTS THE START OF THE PREFERENCE CHAIN AND END OF THE WORK CHAIN. BLOCK "B" IS AN INTERMEDIATE REPRESENTATION OF BOTH CHAINS. BLOCK "C" REPRESENTS THE START OF THE WORK CHAIN AND END OF THE PREFERENCE CHAIN.
3. INTERCONNECT THE WORK AND PREFERENCE CHAIN LEADS AS SHOWN ON G105.
4. THE NUMERICAL DESIGNATION OF THE RP- AND RB- RELAYS CORRESPONDS TO THE HORIZONTAL GROUP NUMBER. THE SM- LEAD NUMERICAL DESIGNATION CORRESPONDS TO THE INCOMING REGISTER NUMBER WHICH IS DERIVED FROM ITS ASSIGNMENT ON THE IRL SWITCH LEVEL.
5. BLOCK "D" ON G105 REPRESENTS THE INITAL APPEARANCE OF THE "ST" CHAIN OF THE PREFERENCE CIRCUIT. BLOCK "F" ON G105 REPRESENTS THE END OF THE "ST" CHAIN OF THE PREFERENCE CIRCUIT.

INCOMING REGISTER LINK
REGISTER PREFERENCE

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G107



SHEET NOTES:
1. CROSS CONNECTIONS DETERMINED BY OFFICE RECORDS.

ISSUE
5

SFD-10-01-G108

REGISTRATION OF INCOMING TRUNK
CLASS INFORMATION IN INCOMING
REGISTER (MF)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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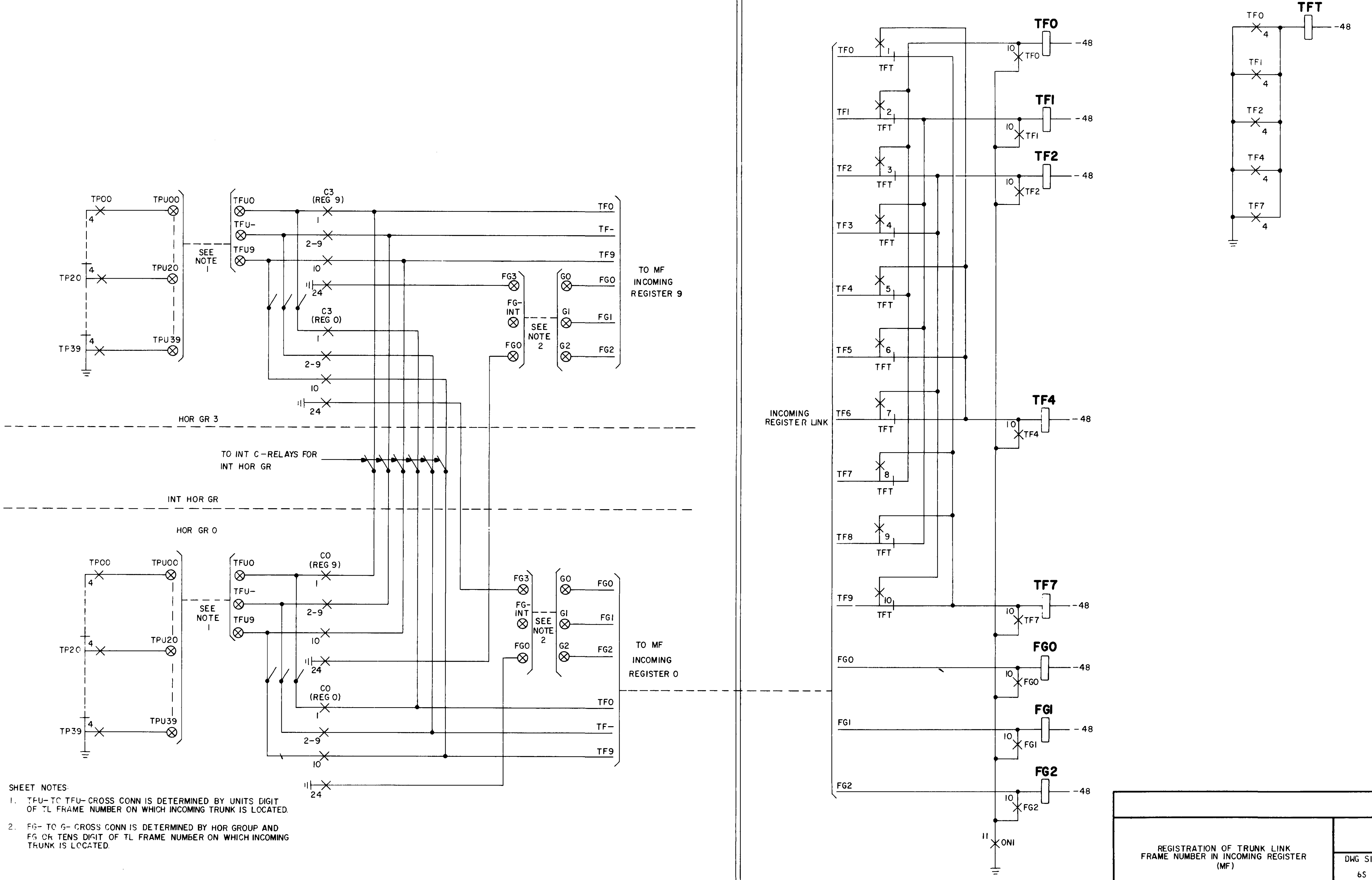
SFD-10-01-G108

INCOMING REGISTER LINK

INCOMING REGISTER
(REGISTER 0)



SHEET NOTES:

1. TFU- TO TFU- CROSS CONN IS DETERMINED BY UNITS DIGIT OF TL FRAME NUMBER ON WHICH INCOMING TRUNK IS LOCATED.
2. FG- TO G- CROSS CONN IS DETERMINED BY HOR GROUP AND FG OR TENS DIGIT OF TL FRAME NUMBER ON WHICH INCOMING TRUNK IS LOCATED.

REGISTRATION OF TRUNK LINK
FRAME NUMBER IN INCOMING REGISTER
(MF)

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES | SFD-10-01- | G109

E-7421 (6-75)
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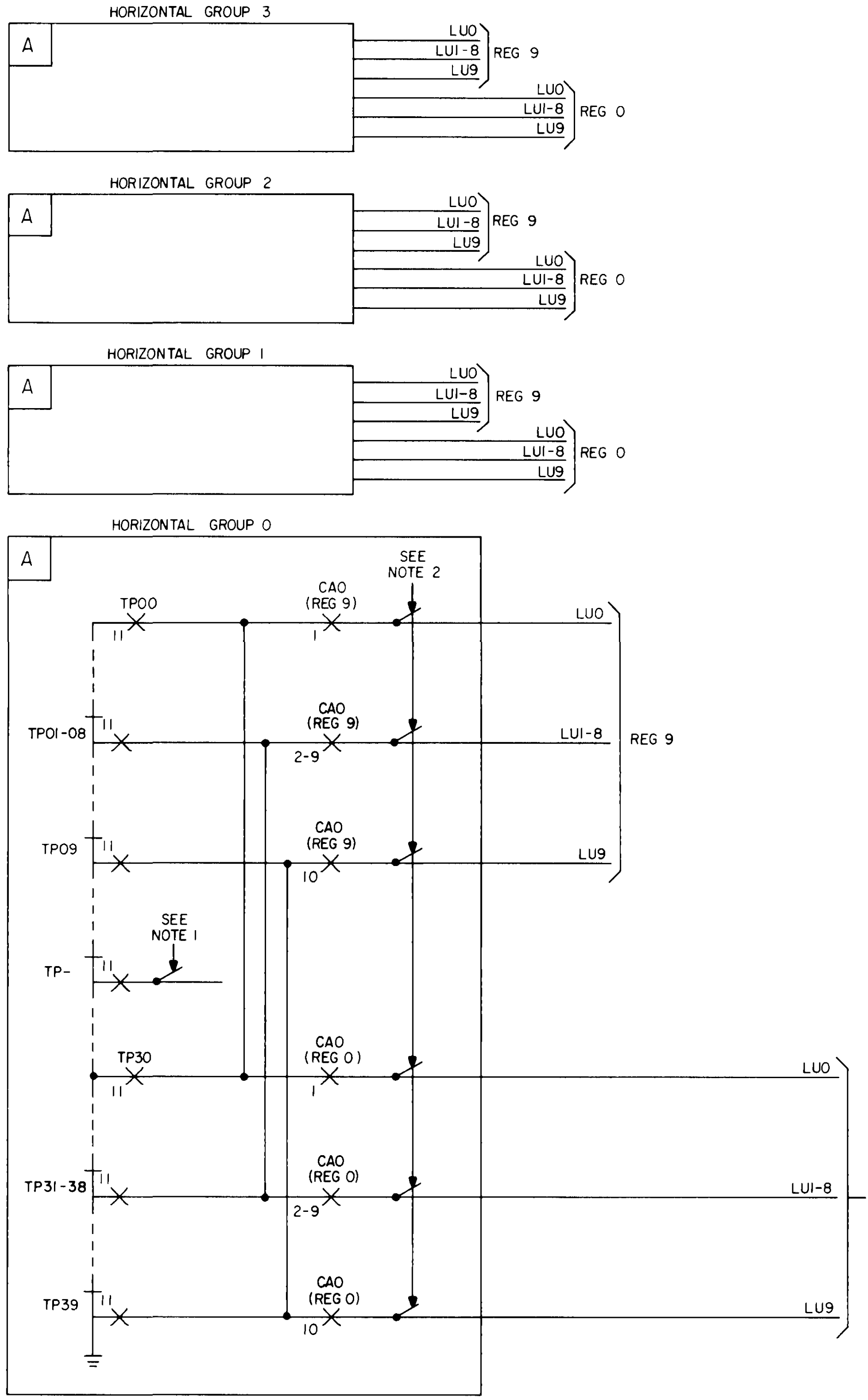
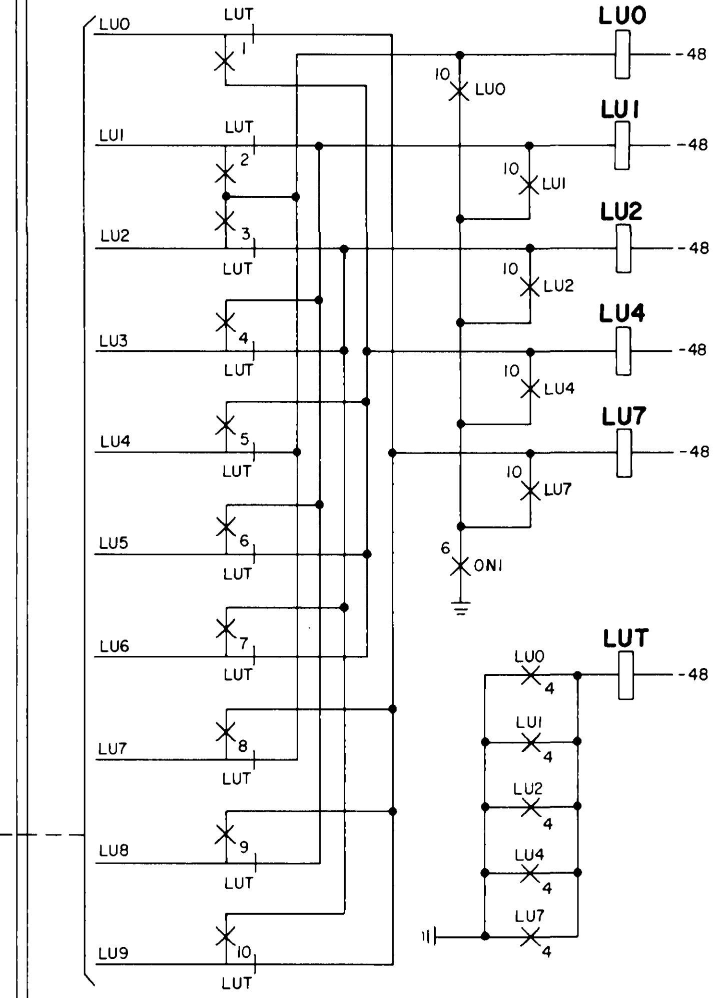
SFD-10-01-G109

INCOMING REGISTER LINK



INCOMING REGISTER

(REGISTER 0)



SHEET NOTES:
1. MULT TO TP- RELAYS SAME UNITS NUMBER.
2. MULT TO CA- RELAYS SAME REGISTER.

ISSUE 5

SFD-10-01-G110

REGISTRATION OF TRUNK NUMBER
IN INCOMING REGISTER (MF)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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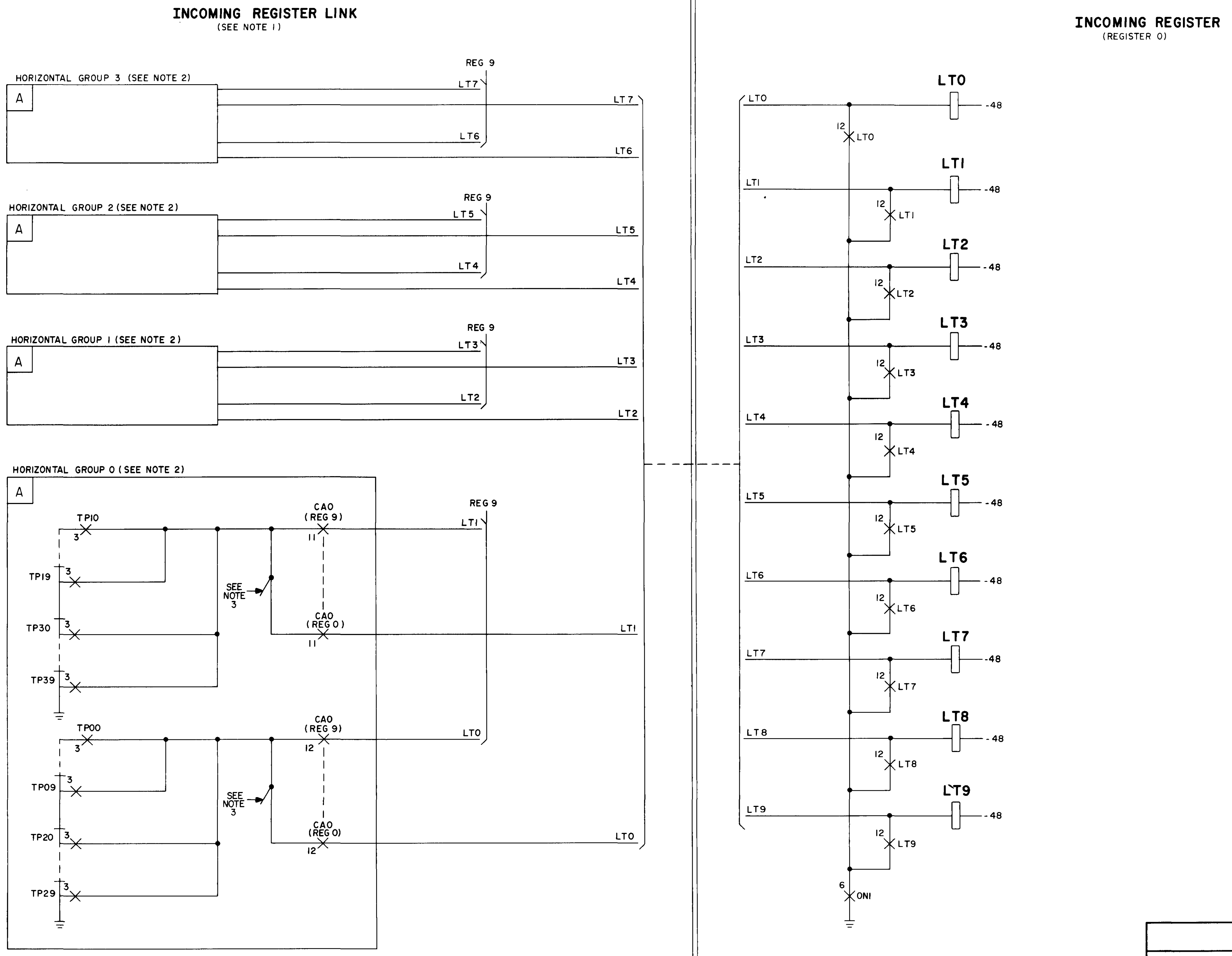
E-7481-L (4-73)

SFD-10-01-G110



SHEET NOTES:

1. LT8, LT9 LEADS USED FOR FRAMES WITH 120 TRUNK CAPACITY.
2. LINK SWITCHES

	HOR GR	LEFT HALF VERT 00-09	RIGHT HALF VERT 10-19
SUPL SWITCH	3	LT6	LT7
	2	LT4	LT5
	1	LT2	LT3
	0	LT0	LT1
BASIC SWITCH	3	LT6	LT7
	2	LT4	LT5
	1	LT2	LT3
	0	LT0	LT1

3. TO CA- RELAYS SAME HORIZONTAL GROUP.

REGISTRATION OF TRUNK NUMBER
IN INCOMING REGISTER (MF)

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES . SFD-10-01- G111

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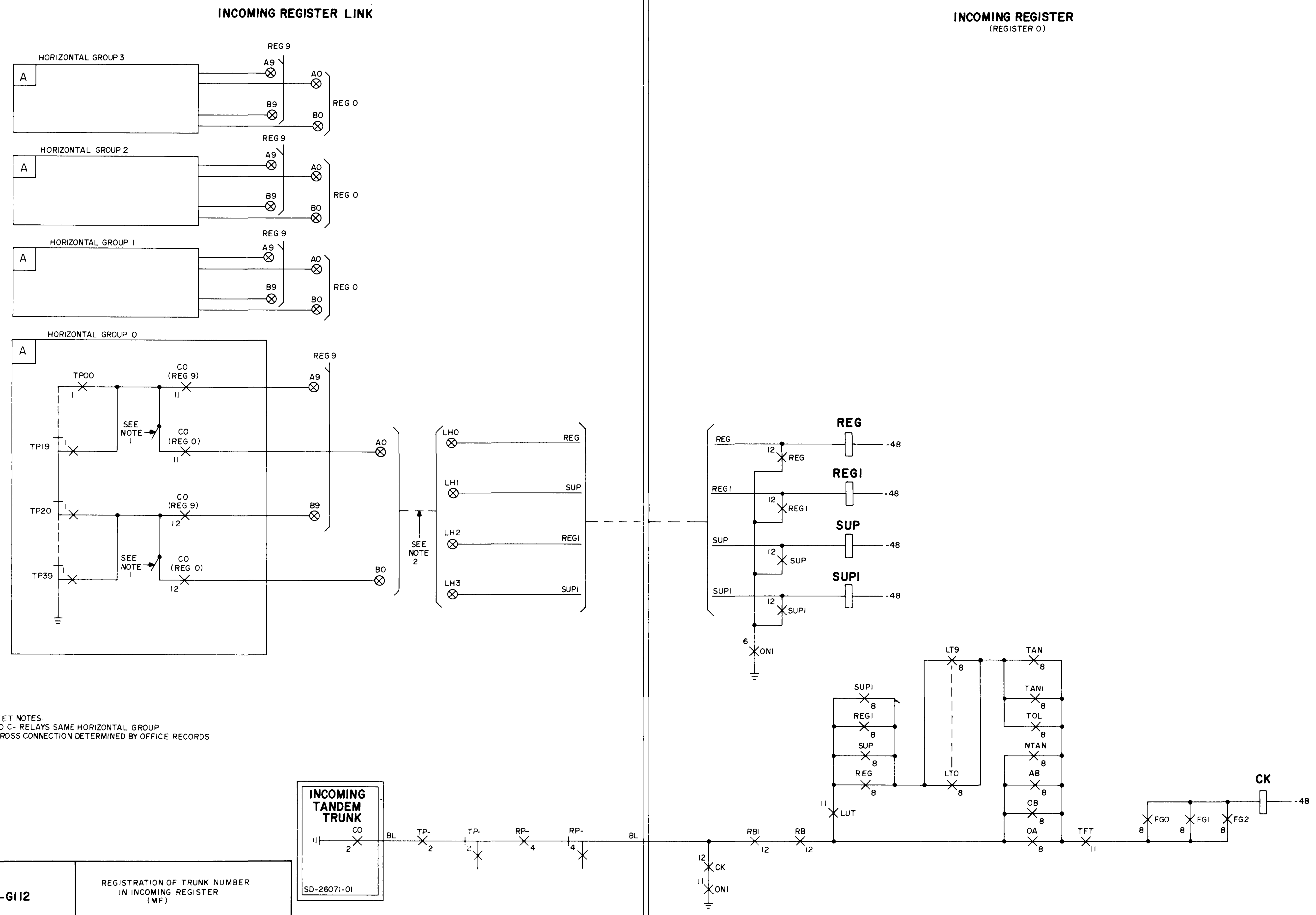

SHEET NOTES:
1. TO C- RELAYS SAME HORIZONTAL GROUP
2. CROSS CONNECTION DETERMINED BY OFFICE RECORDS

ISSUE
5

SFD-10-01-G112

REGISTRATION OF TRUNK NUMBER
IN INCOMING REGISTER
(MF)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
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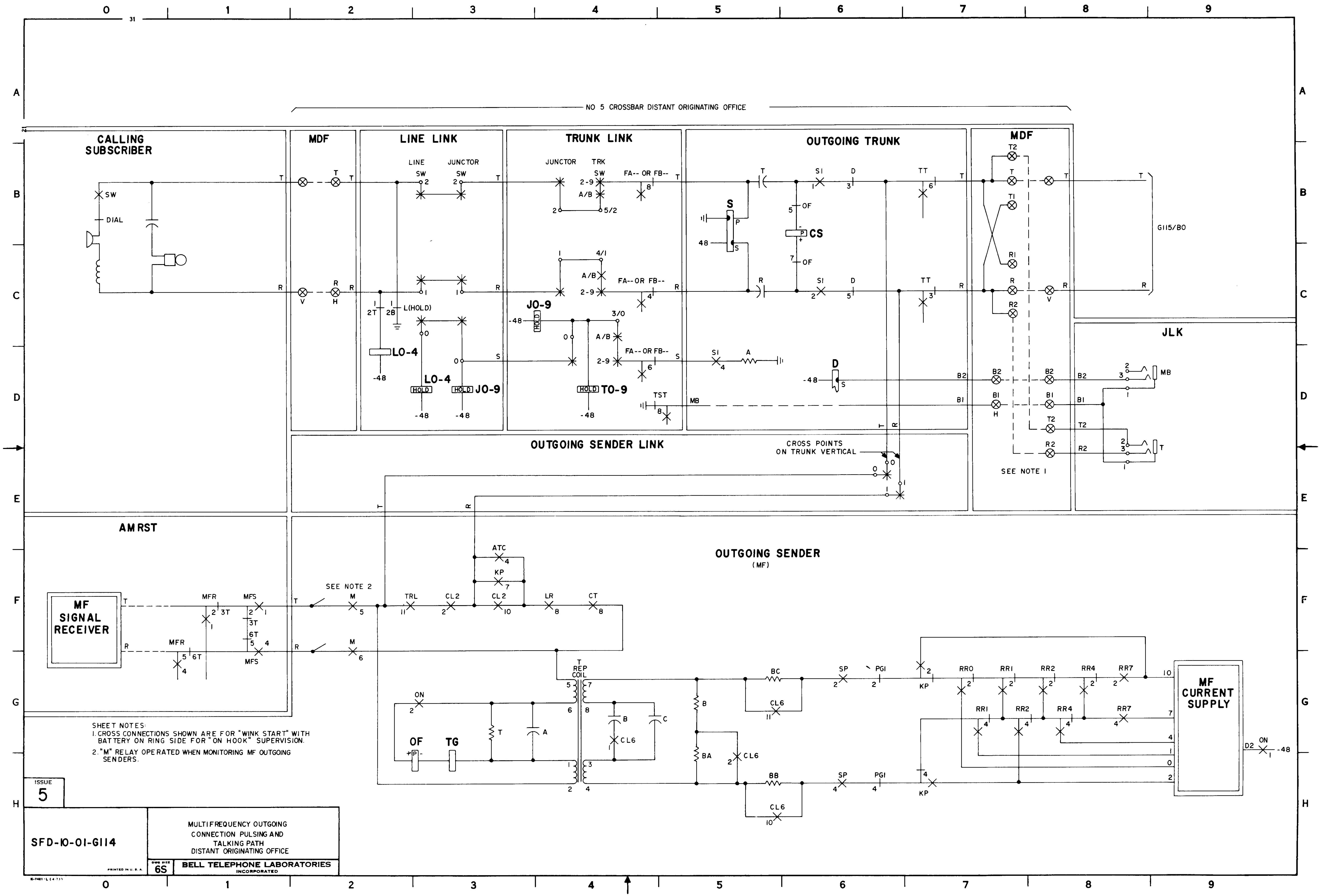
SFD-10-01-G112



SHEET NOTES:

1. CROSS CONNECTIONS SHOWN ARE FOR "WINK START" WITH BATTERY ON RING SIDE FOR "ON HOOK" SUPERVISION.
2. "M" RELAY OPERATED WHEN MONITORING MF OUTGOING SENDERS.

ISSUE
5

SFD-10-01-G114

MULTIFREQUENCY OUTGOING
CONNECTION PULSING AND
TALKING PATH
DISTANT ORIGINATING OFFICE

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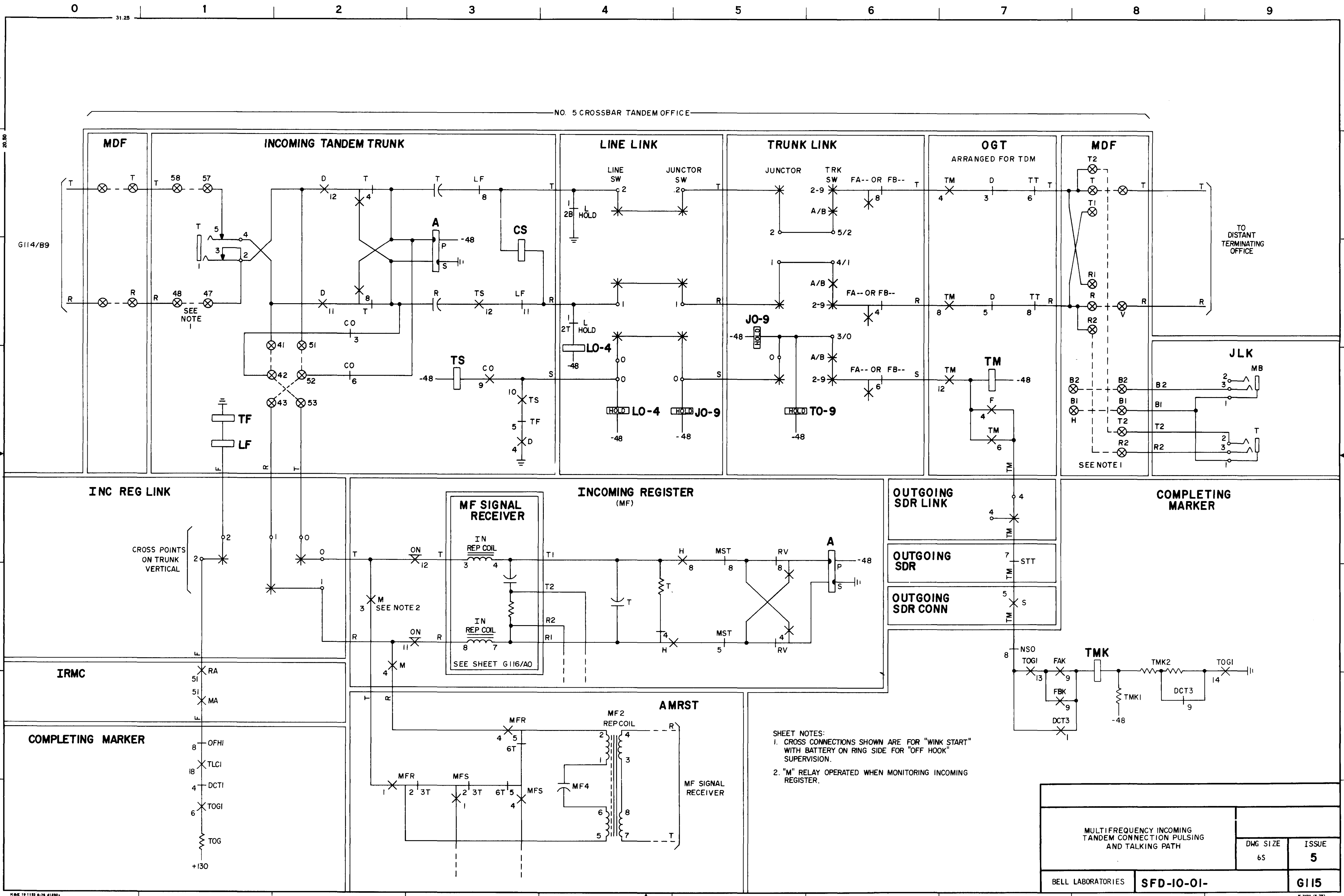
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7421-L (4-73)

SFD-10-01-G114



SHEET NOTES:
1. CROSS CONNECTIONS SHOWN ARE FOR "WINK START" WITH BATTERY ON RING SIDE FOR "OFF HOOK" SUPERVISION.
2. "M" RELAY OPERATED WHEN MONITORING INCOMING REGISTER.

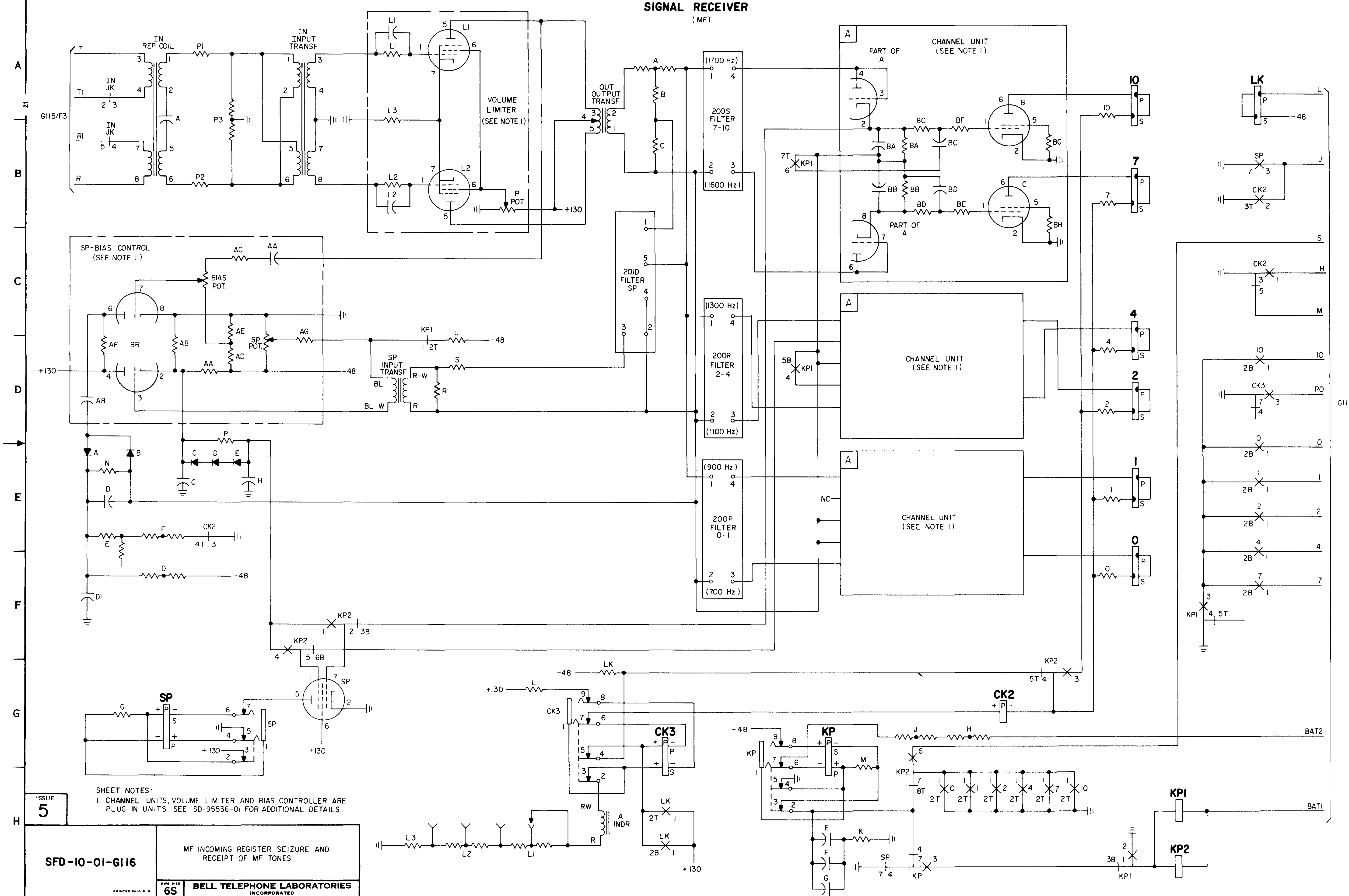
MULTIFREQUENCY INCOMING
TANDEM CONNECTION PULSING
AND TALKING PATH

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G115

SFD-10-01-G115

SIGNAL RECEIVER
(MF)



SHEET NOTES:

1. CHANNEL UNITS, VOLUME LIMITER AND BIAS CONTROLLER ARE PLUG IN UNITS. SEE SD-95536-01 FOR ADDITIONAL DETAILS.

ISSUE
5

SFD-10-01-G116

PRINTED IN U.S.A.

MF INCOMING REGISTER SEIZURE AND RECEIPT OF MF TONES

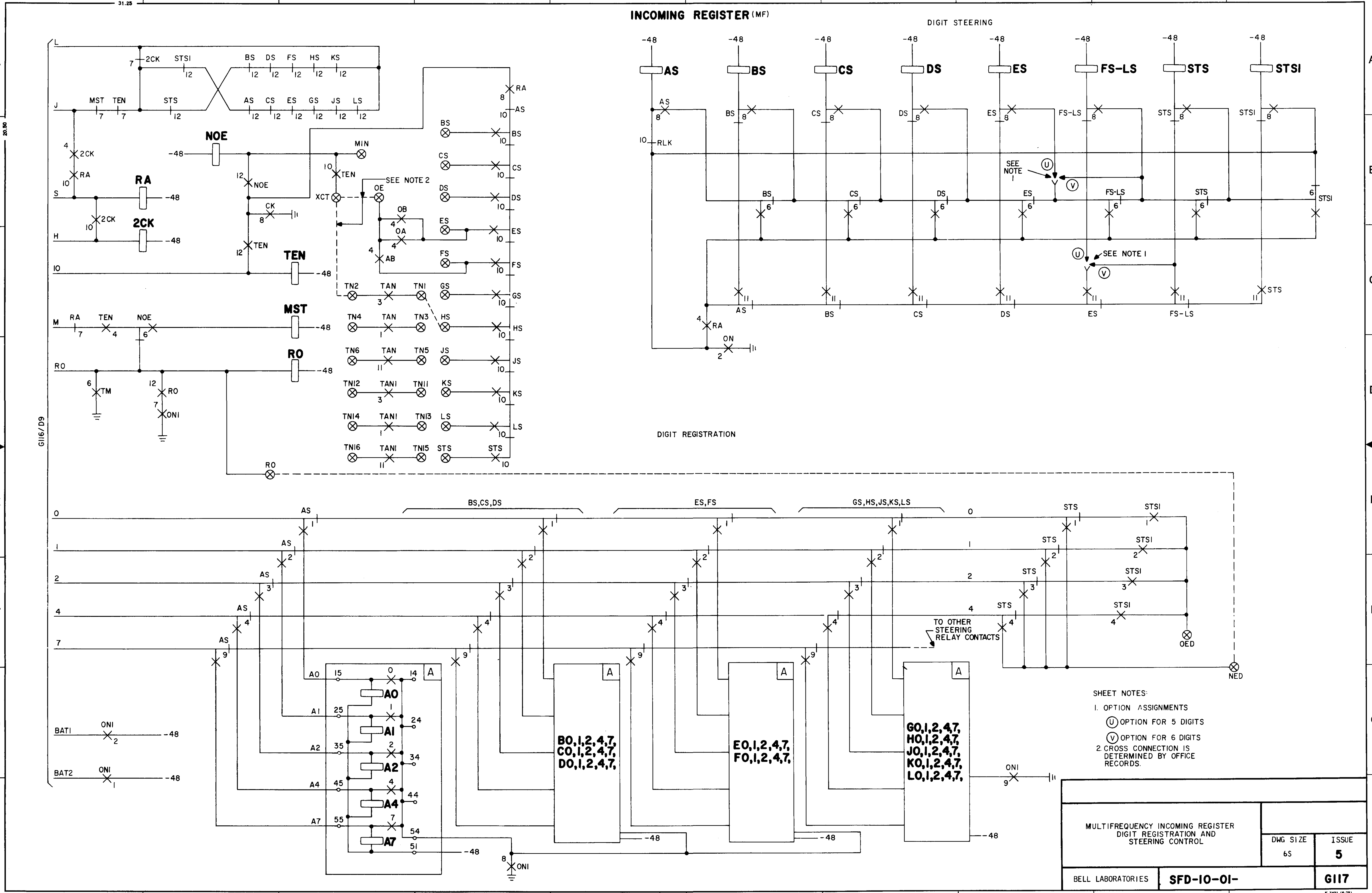
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7421-L (4-71)

SFD-10-01-G116

INCOMING REGISTER (MF)



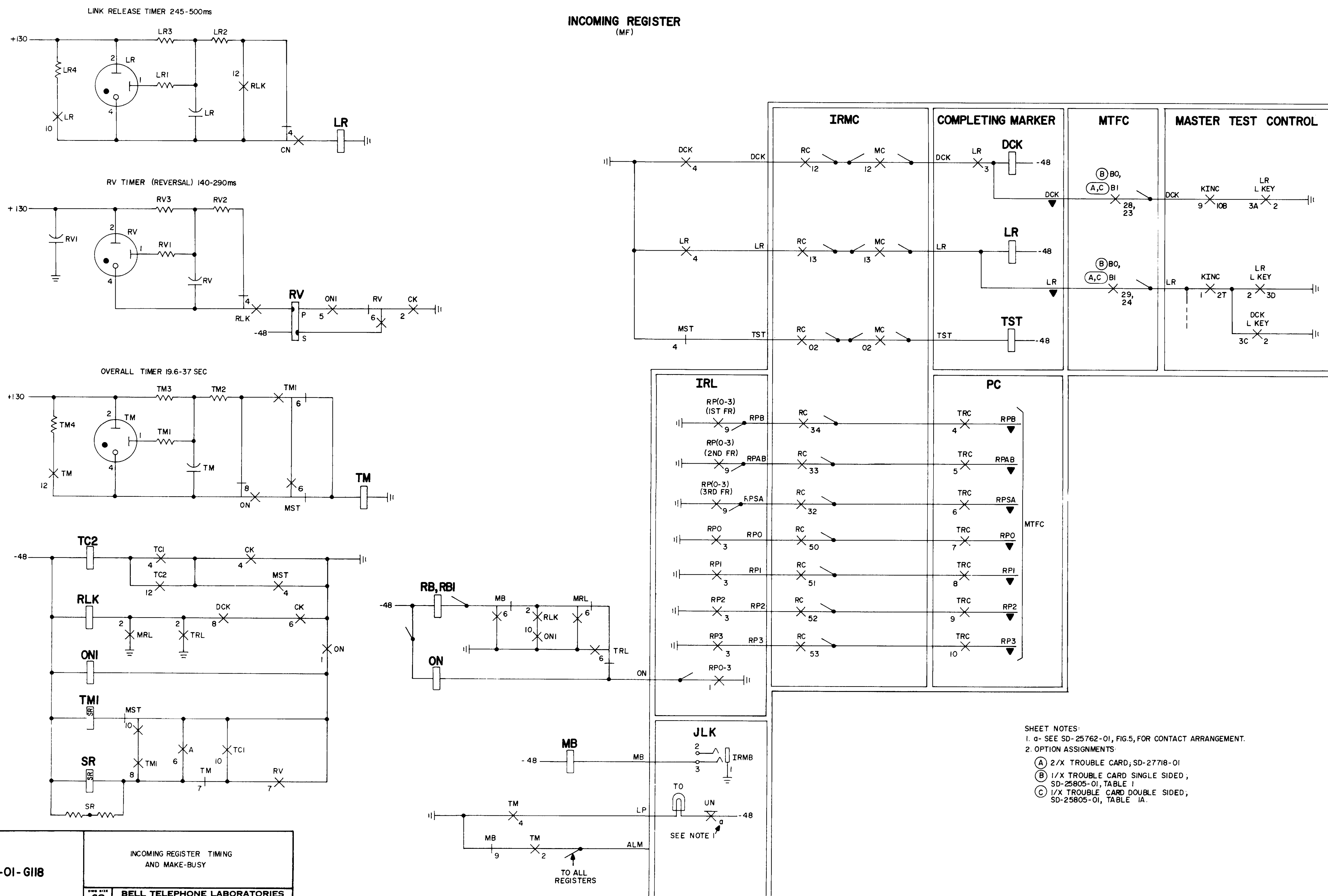
SHEET NOTES:

1. OPTION ASSIGNMENTS
   - Ⓤ OPTION FOR 5 DIGITS
   - Ⓥ OPTION FOR 6 DIGITS
2. CROSS CONNECTION IS DETERMINED BY OFFICE RECORDS.

MULTIFREQUENCY INCOMING REGISTER
DIGIT REGISTRATION AND
STEERING CONTROL

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G117



SHEET NOTES:
1. a- SEE SD-25762-01, FIG.5, FOR CONTACT ARRANGEMENT.
2. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED, SD-25805-01, TABLE I
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED, SD-25805-01, TABLE IA.

ISSUE
5

SFD-10-01-G118

INCOMING REGISTER TIMING
AND MAKE-BUSY

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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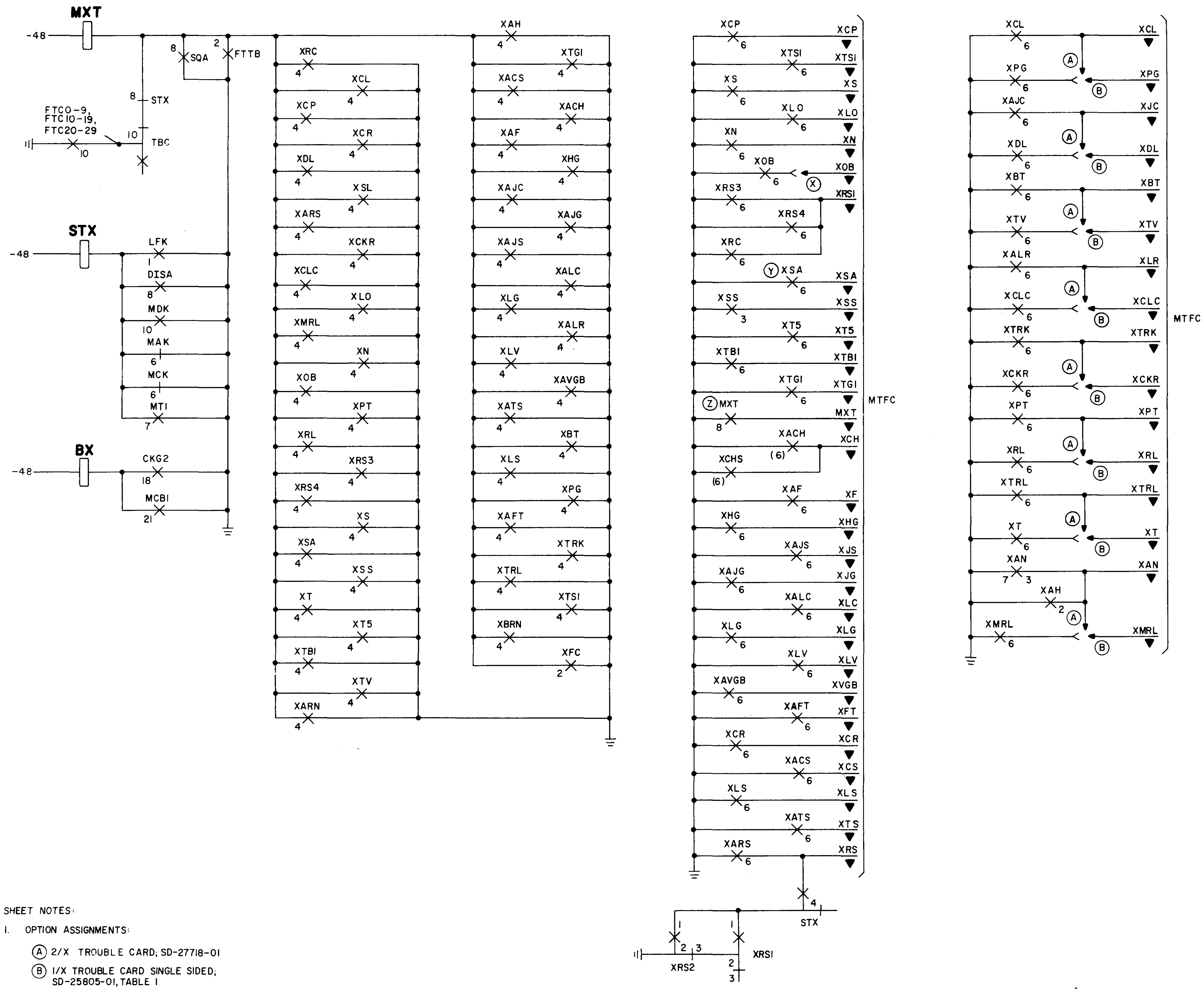
E-7481-L (4-71)

SFD-10-01-G118

COMPLETING MARKER



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I

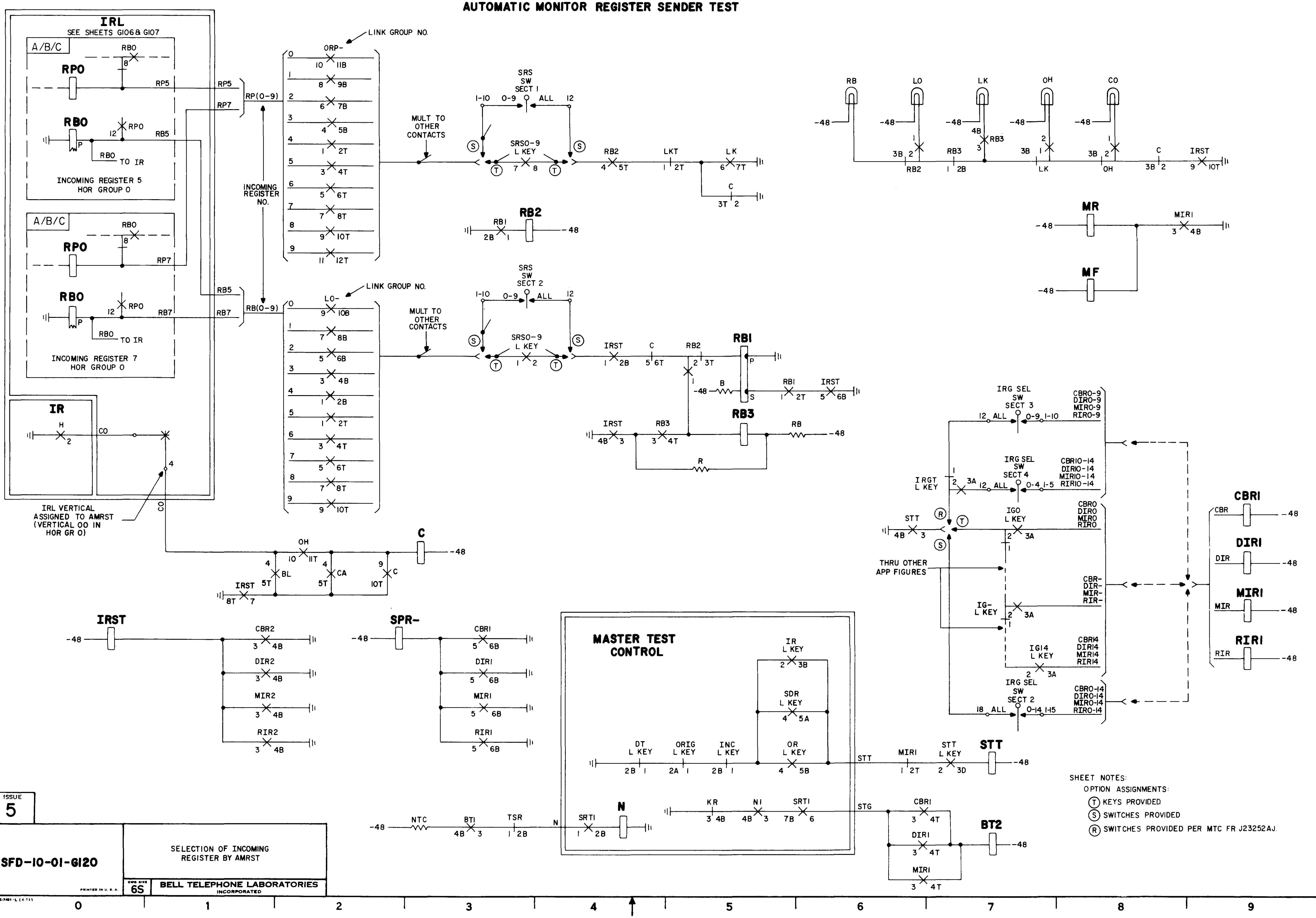
Ⓧ (A&M)-XOB PUNCH PROVIDED WHEN MXT PUNCH NOT PROVIDED.

Ⓨ U TYPE SENDER CONN AND AMA PROVIDED.

Ⓩ MXT PUNCH PROVIDED.(DOUBLE SIDED 1/X OR 2/X CARD)

STANDING CROSS RELAY TROUBLE INDICATIONS	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G119

AUTOMATIC MONITOR REGISTER SENDER TEST



SHEET NOTES:
OPTION ASSIGNMENTS:
Ⓣ KEYS PROVIDED
Ⓢ SWITCHES PROVIDED
Ⓡ SWITCHES PROVIDED PER MTC FR J23252AJ

ISSUE
5

SFD-10-01-G120

SELECTION OF INCOMING
REGISTER BY AMRST

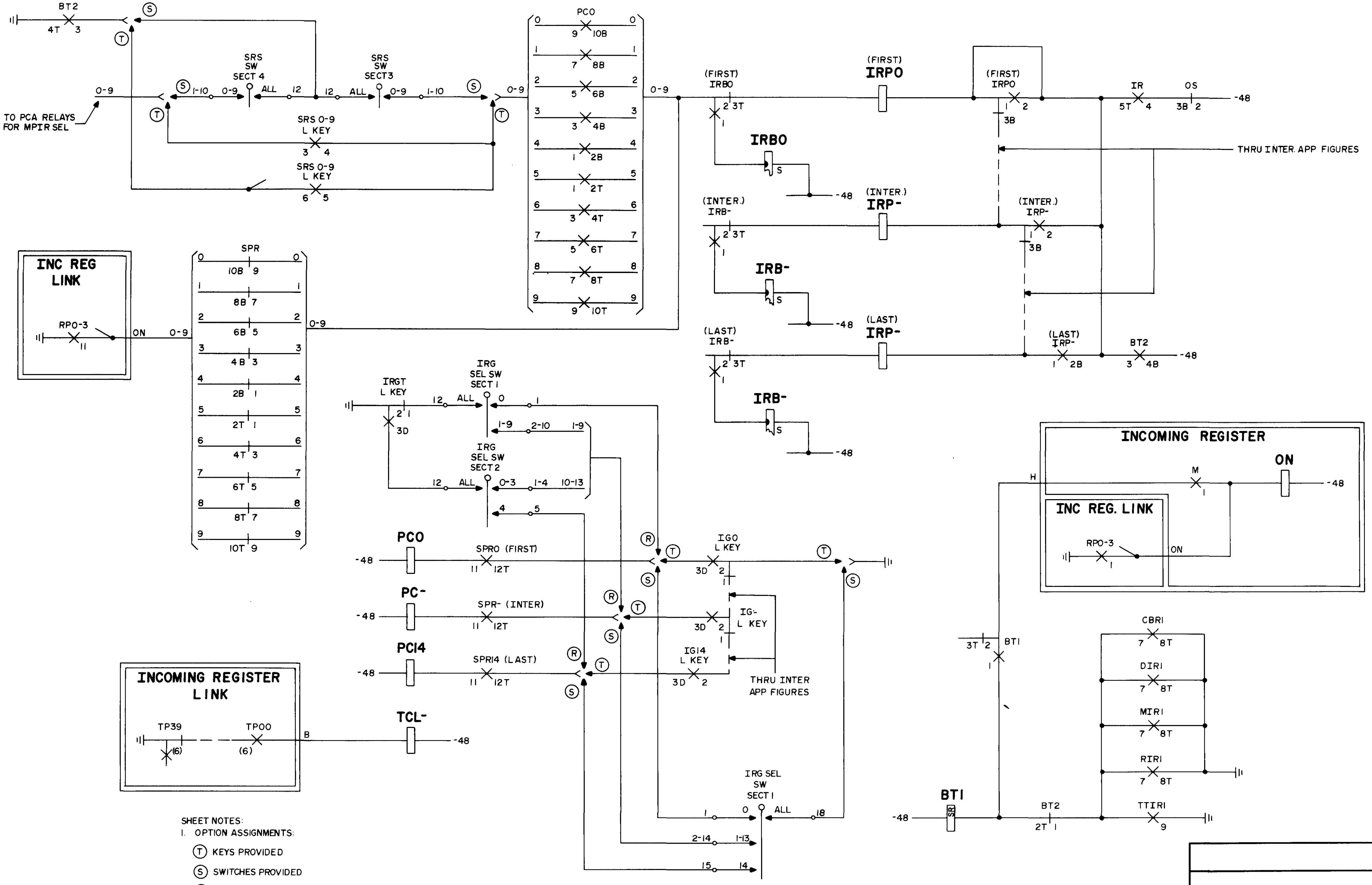
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-G120

AUTOMATIC MONITOR REGISTER SENDER TEST



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓣ KEYS PROVIDED

Ⓢ SWITCHES PROVIDED

Ⓡ SWITCHES PROVIDED PER MTC FR J23252AJ

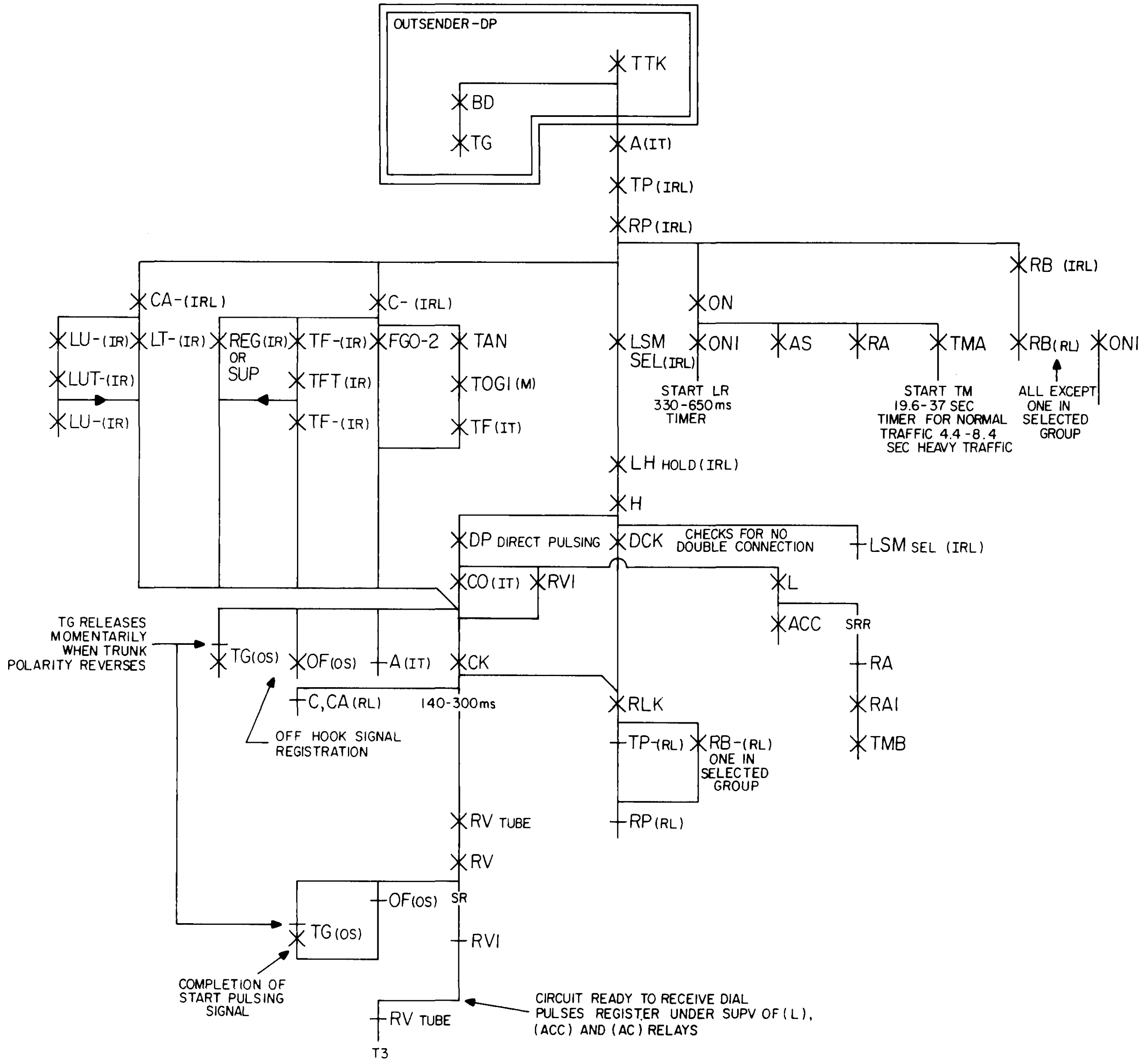
SELECTION OF INCOMING
REGISTER BY AMRST

DWG SIZE	ISSUE
6S	5

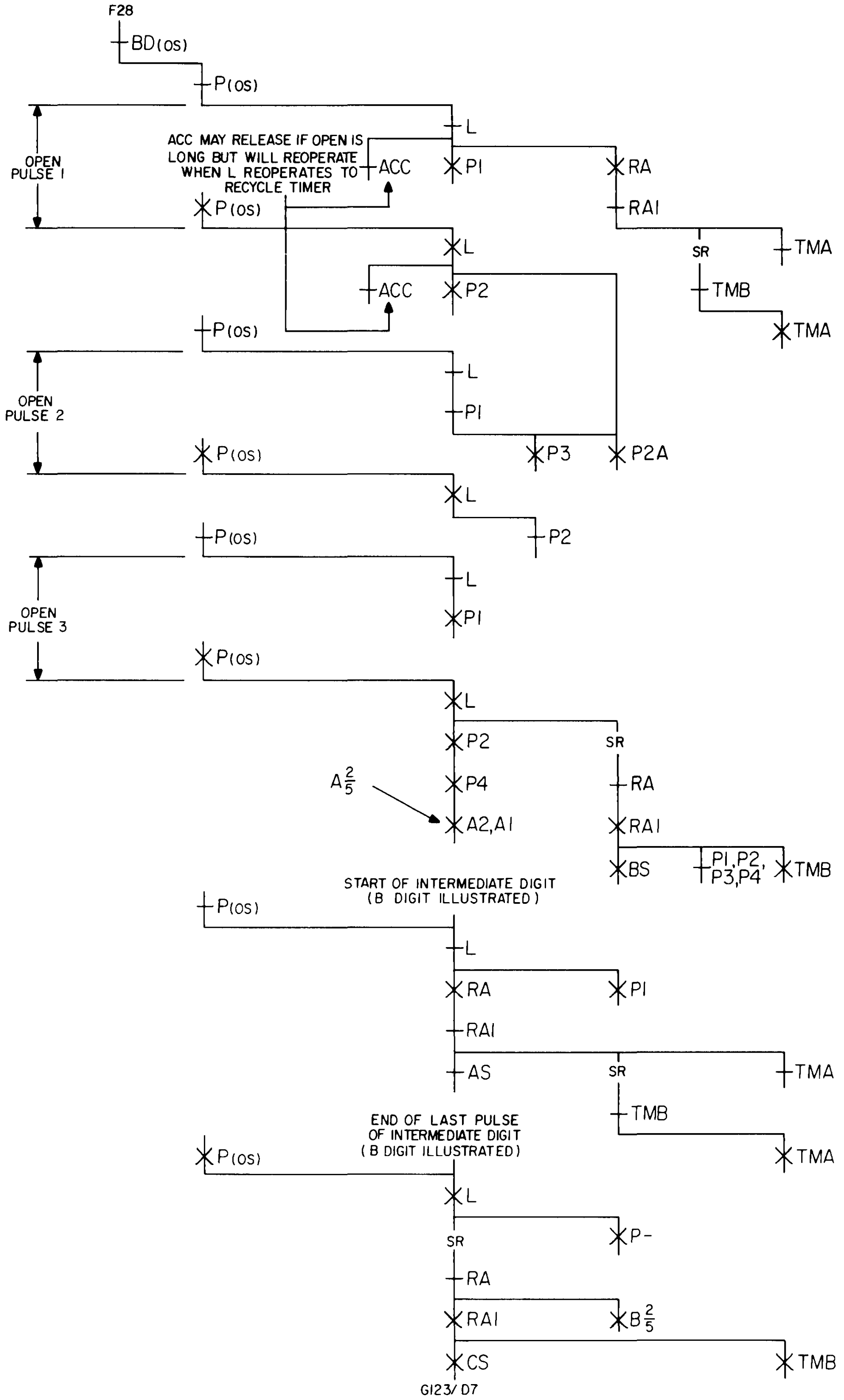
BELL LABORATORIES | SFD-10-01- | G121

E-7421 (6-73) PRINTED IN U.S.A.

CALL FROM NO. 5 OUTGOING SENDER
(TANDEM CALL)


OUTSENDER-DP
TTK
BD
TG
A(IT)
TP(IRL)
RP(IRL)
RB (IRL)
CA-(IRL)
C-(IRL)
ON
LU-(IR)
LT-(IR)
REG(IR) OR SUP
TF-(IR)
FGO-2
TAN
LSM SEL(IRL)
ONI
AS
RA
TMA
RB(RL)
ONI
LUT-(IR)
TFT(IR)
TOGI(M)
START LR 330-650ms TIMER
START TM 19.6-37 SEC TIMER FOR NORMAL TRAFFIC 4.4-8.4 SEC HEAVY TRAFFIC
ALL EXCEPT ONE IN SELECTED GROUP
LU-(IR)
TF-(IR)
TF(IT)
LH HOLD (IRL)
H
DP DIRECT PULSING
DCK
CHECKS FOR NO DOUBLE CONNECTION
LSM SEL (IRL)
CO(IT)
RVI
L
ACC
SRR
TG RELEASES MOMENTARILY WHEN TRUNK POLARITY REVERSES
TG(OS)
OF(OS)
A(IT)
CK
RA
C,CA(RL)
140-300ms
RLK
RAI
OFF HOOK SIGNAL REGISTRATION
TP-(RL)
RB-(RL) ONE IN SELECTED GROUP
TMB
RP(RL)
RV TUBE
RV
OF(OS)
SR
TG(OS)
RVI
COMPLETION OF START PULSING SIGNAL
RV TUBE
T3
CIRCUIT READY TO RECEIVE DIAL PULSES REGISTER UNDER SUPV OF (L), (ACC) AND (AC) RELAYS

DIALING FIRST DIGIT



ISSUE
5

SFD-10-01-G122

SEQUENCE CHART
DIAL PULSE INCOMING REGISTER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

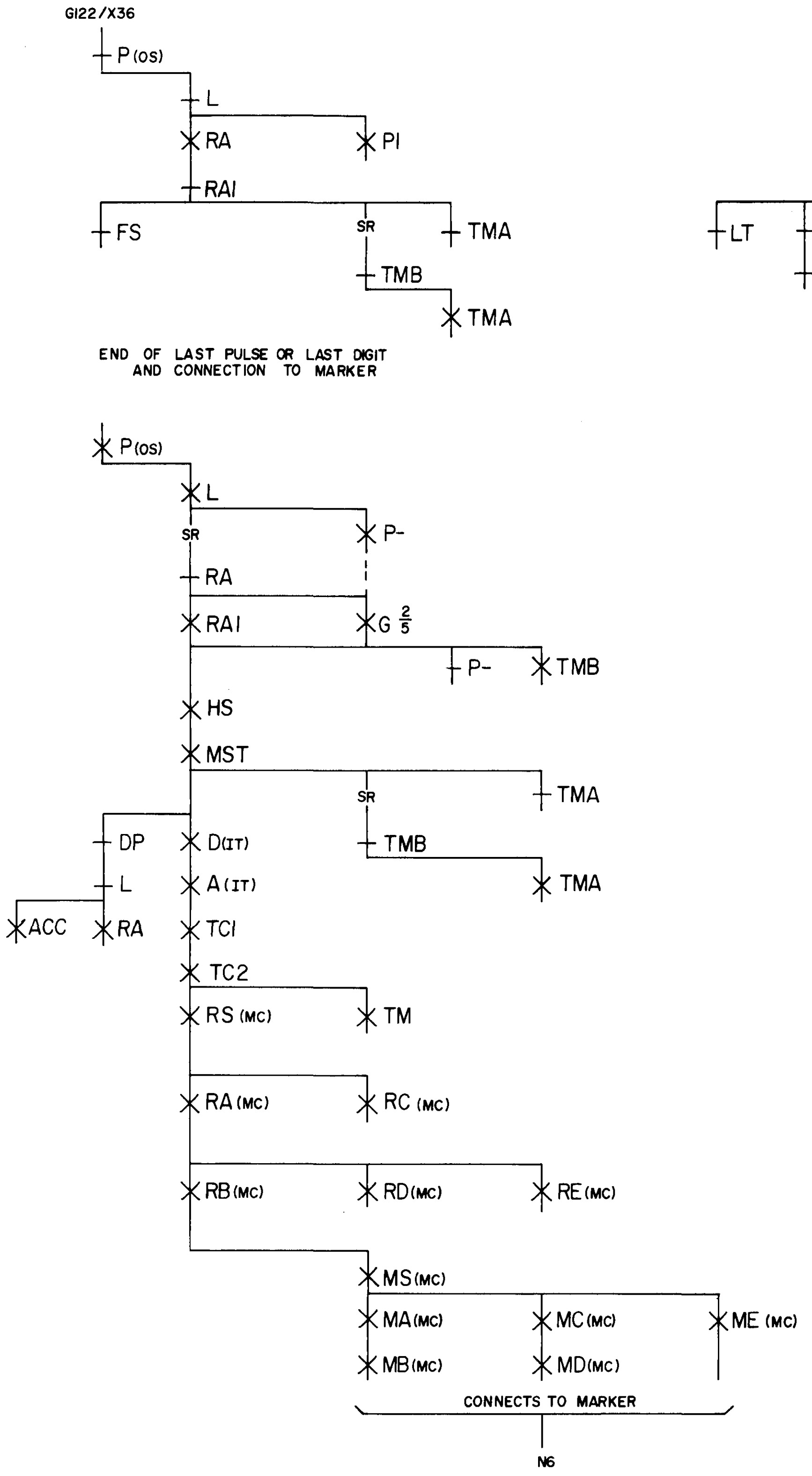
PRINTED IN U.S.A.

E-7481-L (4-71)

SFD-10-01-G122

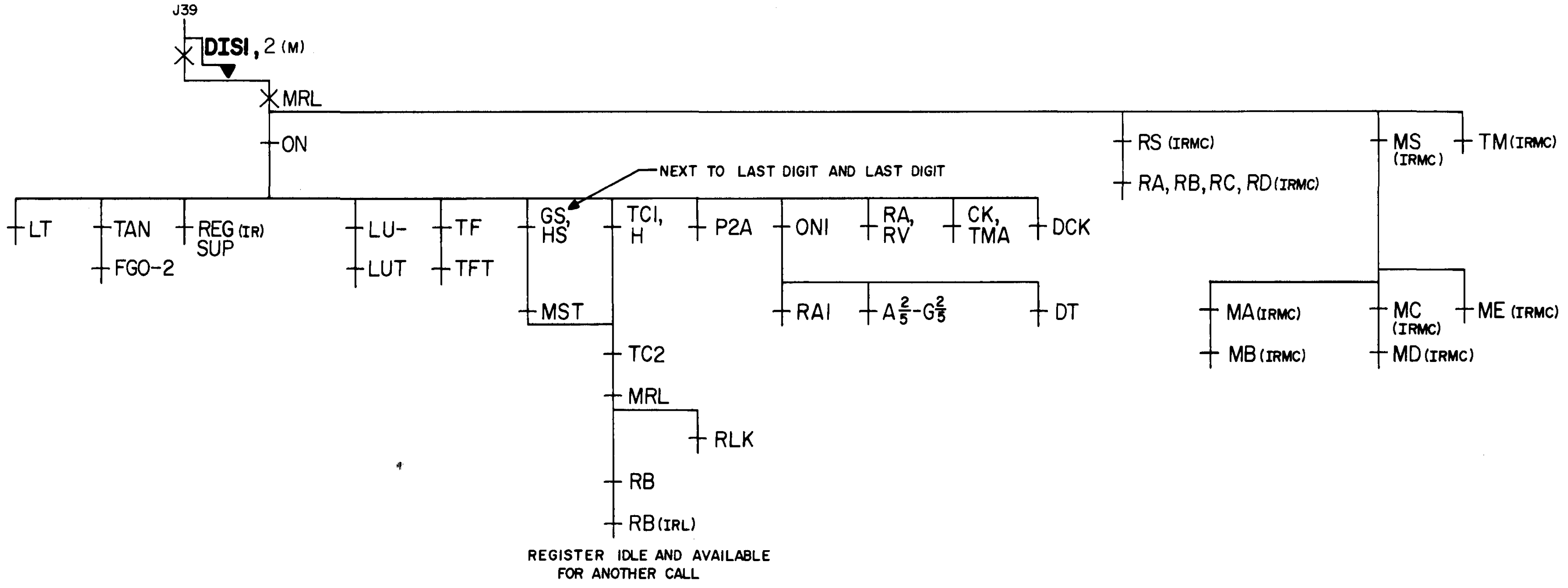
CALL FROM NO. 5 OUTGOING SENDER

(TANDEM CALL)
START OF LAST DIGIT

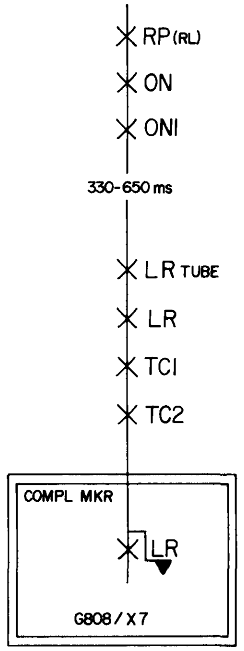


RELEASE OF REGISTER

DIAL PULSE



LINK RELEASE
TIME OUT



SEQUENCE CHART
DIAL PULSE INCOMING REGISTER

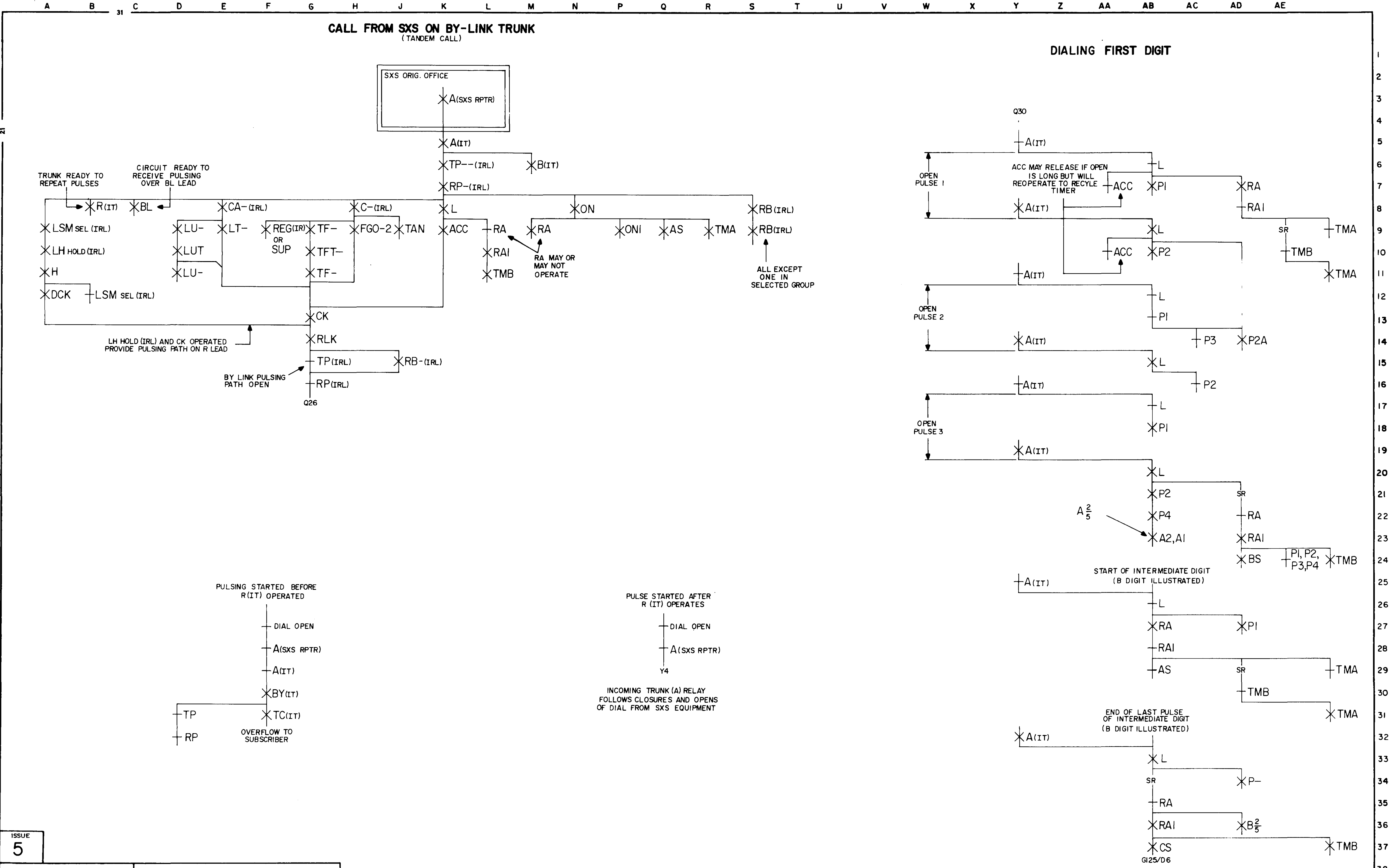
DWG SIZE 6S	ISSUE 5

BELL LABORATORIES SFD-10-01- G123

SFD-10-01-G123

BRUNING 44-131 28142

E-7421-B (6-75) PRINTED IN U.S.A.



ISSUE
5

SFD-10-01-G124

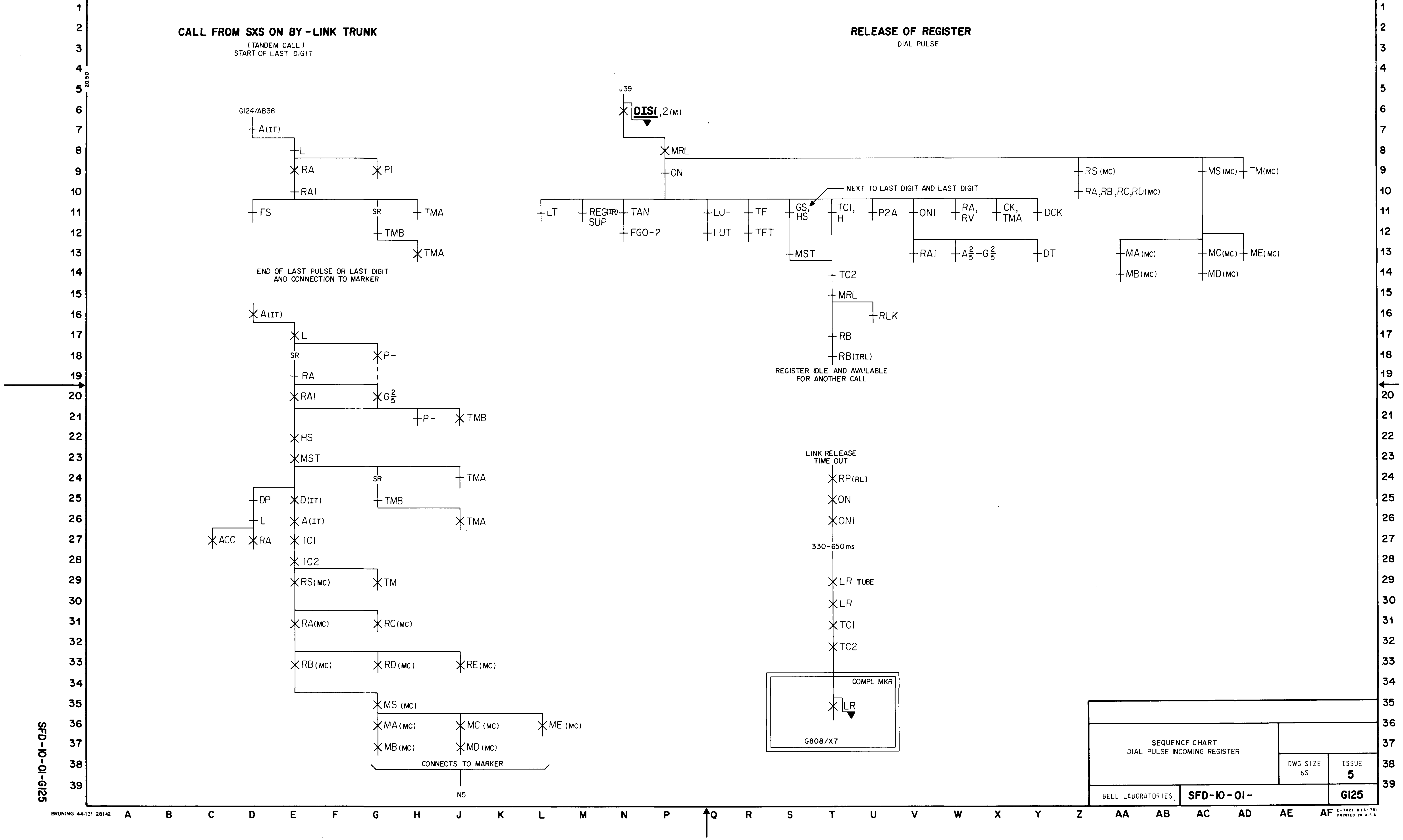
SEQUENCE CHART
DIAL PULSE INCOMING REGISTER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-G124



CALL FROM SXS ON BY-LINK TRUNK

(TANDEM CALL)
START OF LAST DIGIT

END OF LAST PULSE OR LAST DIGIT
AND CONNECTION TO MARKER

CONNECTS TO MARKER

RELEASE OF REGISTER

DIAL PULSE

NEXT TO LAST DIGIT AND LAST DIGIT

REGISTER IDLE AND AVAILABLE
FOR ANOTHER CALL

LINK RELEASE
TIME OUT

SEQUENCE CHART
DIAL PULSE INCOMING REGISTER

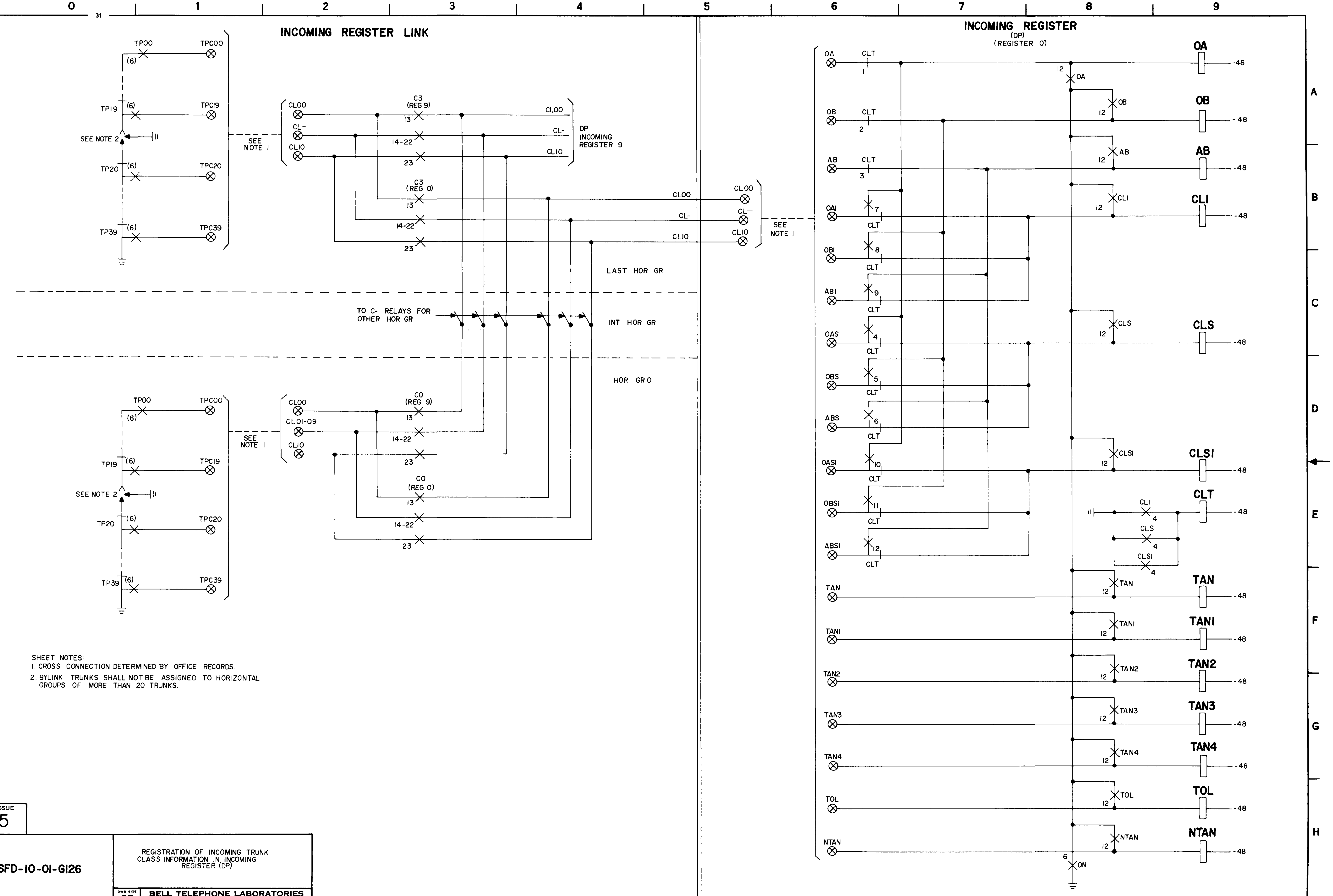
DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G125

SFD-10-01-G125

BRUNING 44-131 28142

E-7421-B (6-75) PRINTED IN U.S.A.



SHEET NOTES:
1. CROSS CONNECTION DETERMINED BY OFFICE RECORDS.
2. BYLINK TRUNKS SHALL NOT BE ASSIGNED TO HORIZONTAL GROUPS OF MORE THAN 20 TRUNKS.

ISSUE
5

SFD-10-01-G126

REGISTRATION OF INCOMING TRUNK CLASS INFORMATION IN INCOMING REGISTER (DP)

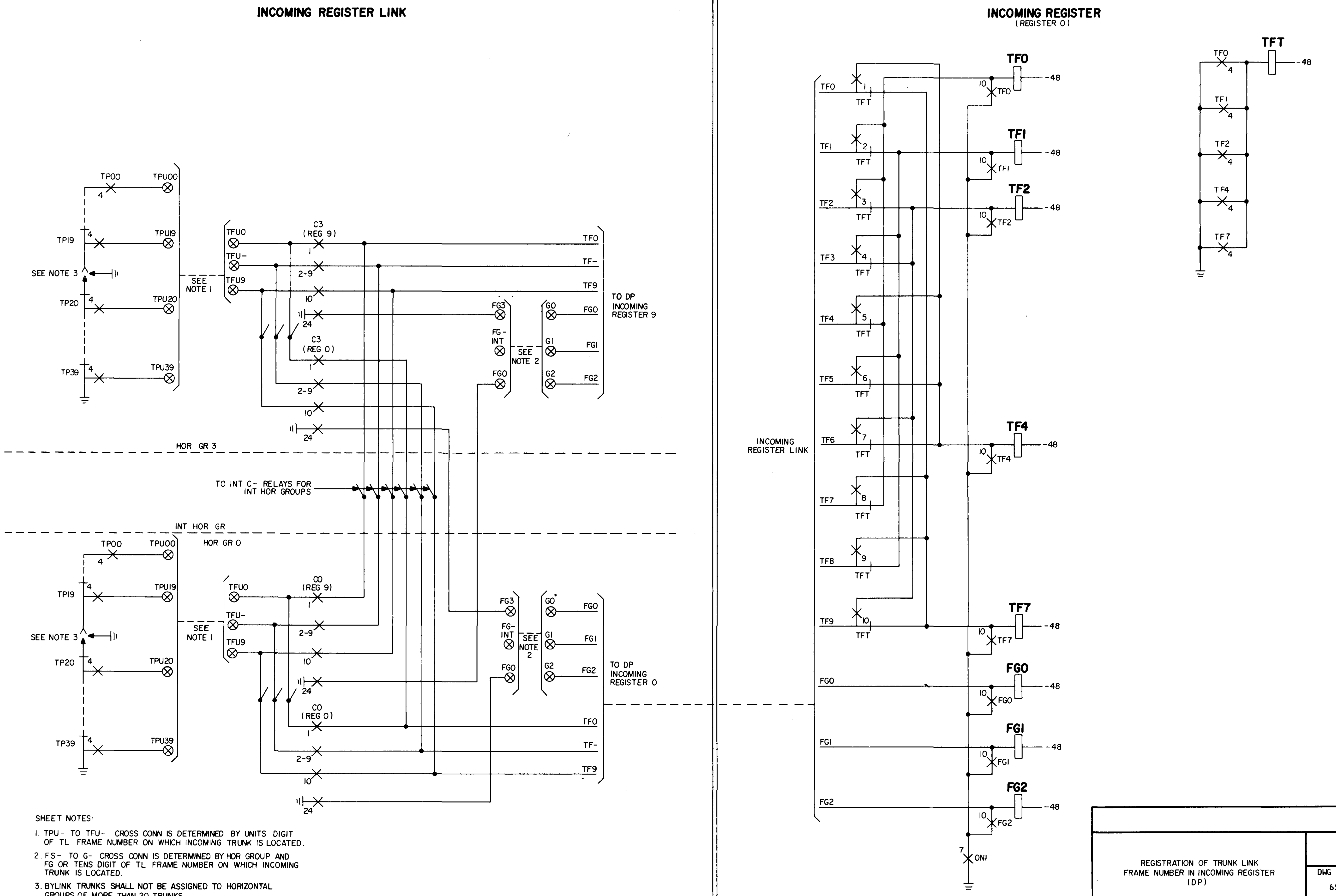
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7481-L (4-71)

SFD-10-01-G126



SHEET NOTES:

1. TPU- TO TFU- CROSS CONN IS DETERMINED BY UNITS DIGIT OF TL FRAME NUMBER ON WHICH INCOMING TRUNK IS LOCATED.
2. FS- TO G- CROSS CONN IS DETERMINED BY HOR GROUP AND FG OR TENS DIGIT OF TL FRAME NUMBER ON WHICH INCOMING TRUNK IS LOCATED.
3. BYLINK TRUNKS SHALL NOT BE ASSIGNED TO HORIZONTAL GROUPS OF MORE THAN 20 TRUNKS.

REGISTRATION OF TRUNK LINK
FRAME NUMBER IN INCOMING REGISTER
(DP)

	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G127

E-7421 (6-75)
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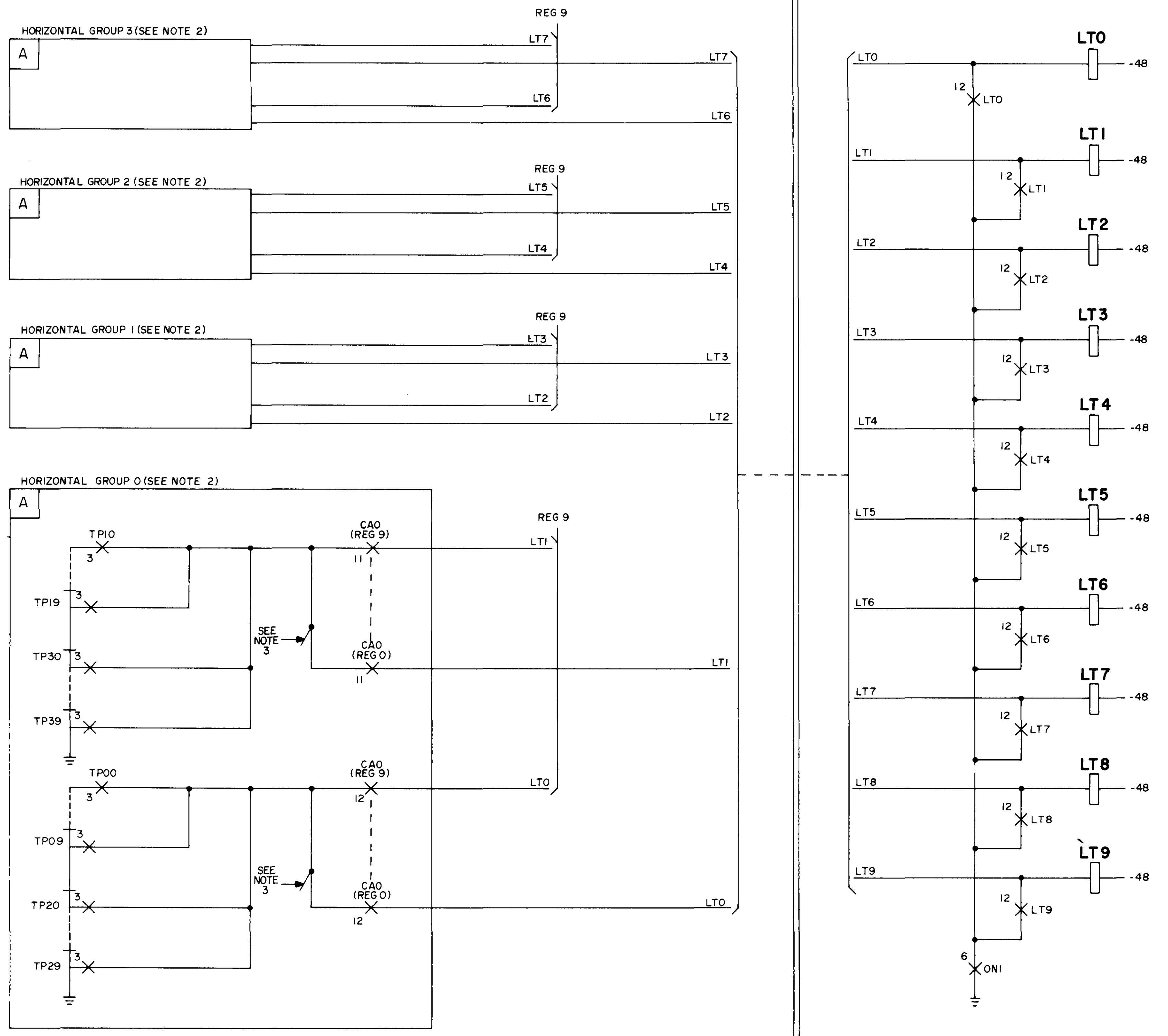
INCOMING REGISTER LINK
(SEE NOTE 1)

INCOMING REGISTER
(REGISTER 0)



SHEET NOTES:

1. LT8, LT9 LEADS USED FOR FRAMES WITH 120 TRUNK CAPACITY

2. LINK SWITCHES

	HOR GR	LEFT HALF VERT 00-09	RIGHT HALF VERT 10-19
SUPL SWITCH	3	LT6	LT7
	2	LT4	LT5
	1	LT2	LT3
	0	LT0	LT1
BASIC SWITCH	3	LT6	LT7
	2	LT4	LT5
	1	LT2	LT3
	0	LT0	LT1

3. TO CA- RELAYS SAME HORIZONTAL GROUP

ISSUE
5

SFD-10-01-G128

REGISTRATION OF TRUNK NUMBER
IN INCOMING REGISTER
(DP)

DWG SIZE 6S

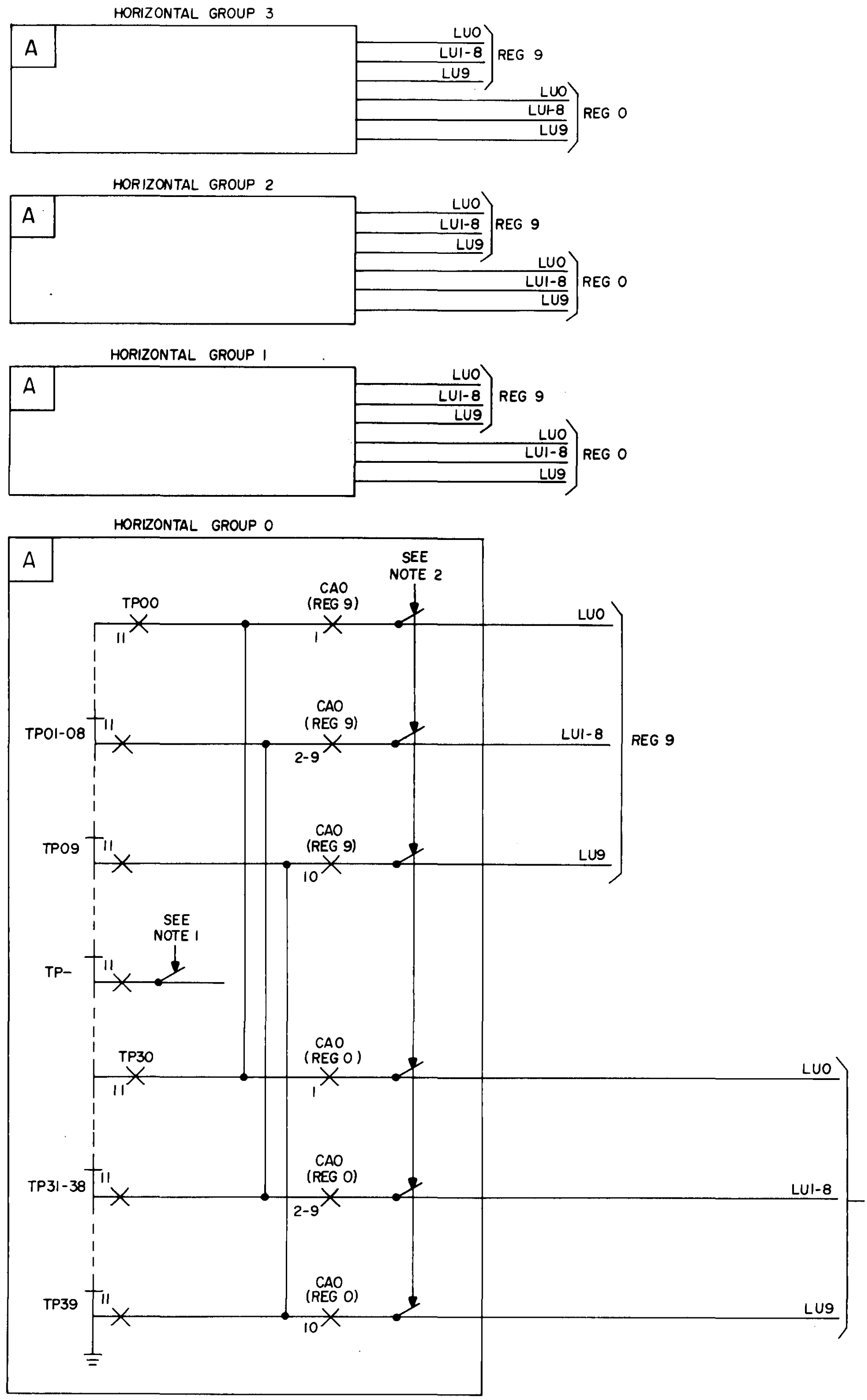
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7481-L (4-72)

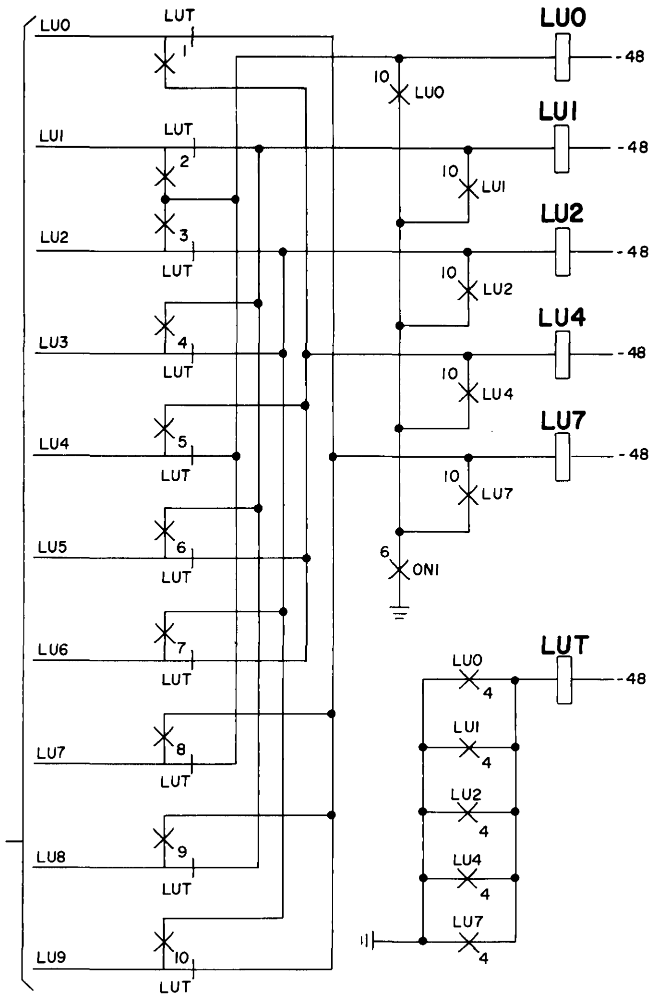
SFD-10-01-G128

INCOMING REGISTER LINK



INCOMING REGISTER

(REGISTER 0)



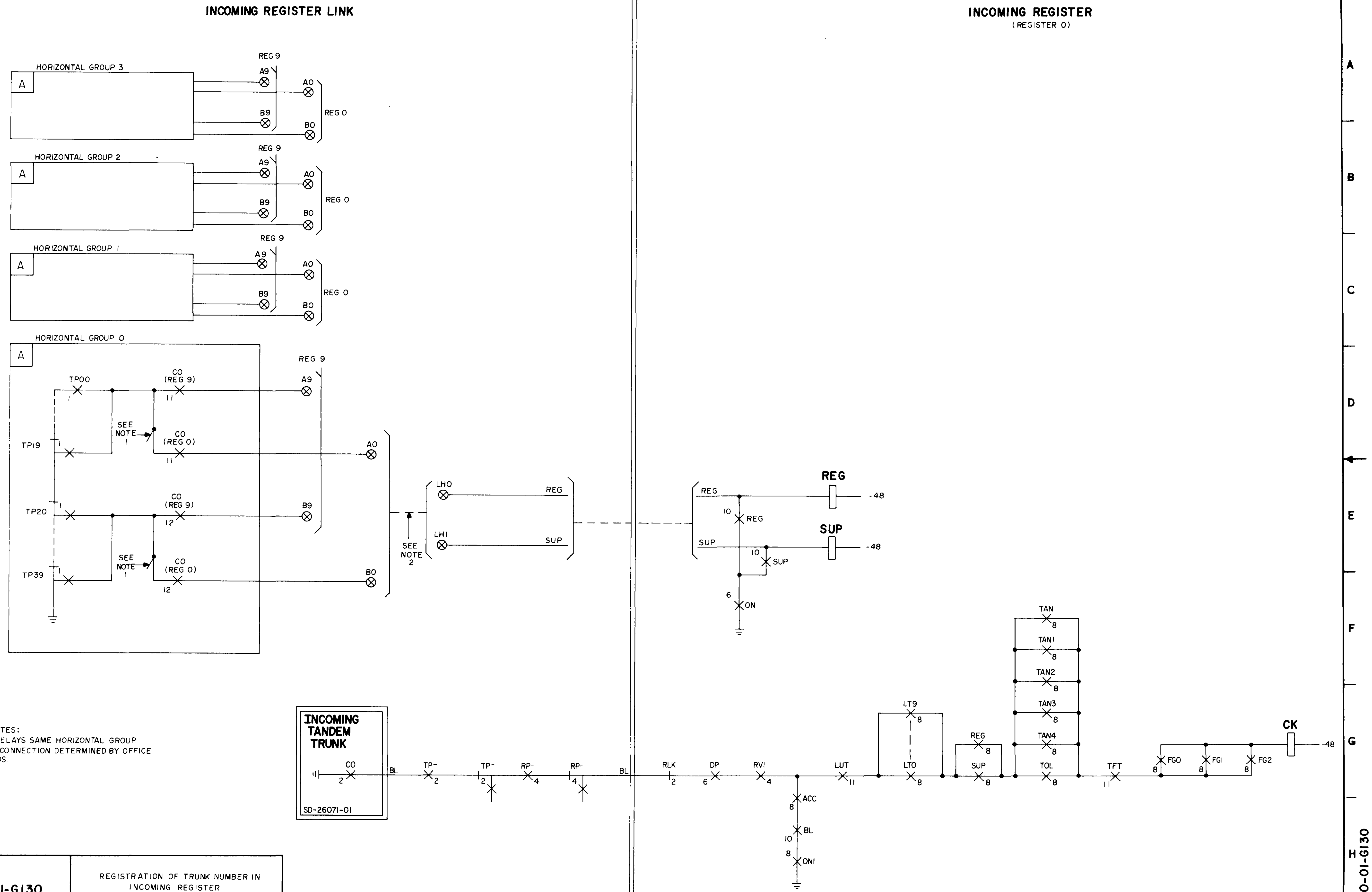
SHEET NOTES:
1. MULT TO TP- RELAYS SAME UNITS NUMBER.
2. MULT TO CA- RELAYS SAME REGISTER.

REGISTRATION OF TRUNK NUMBER
IN IR
(DP)

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G129

SFD-10-01-G129



SHEET NOTES:

1 TO C- RELAYS SAME HORIZONTAL GROUP

2 CROSS CONNECTION DETERMINED BY OFFICE RECORDS

ISSUE
5

SFD-10-01-G130

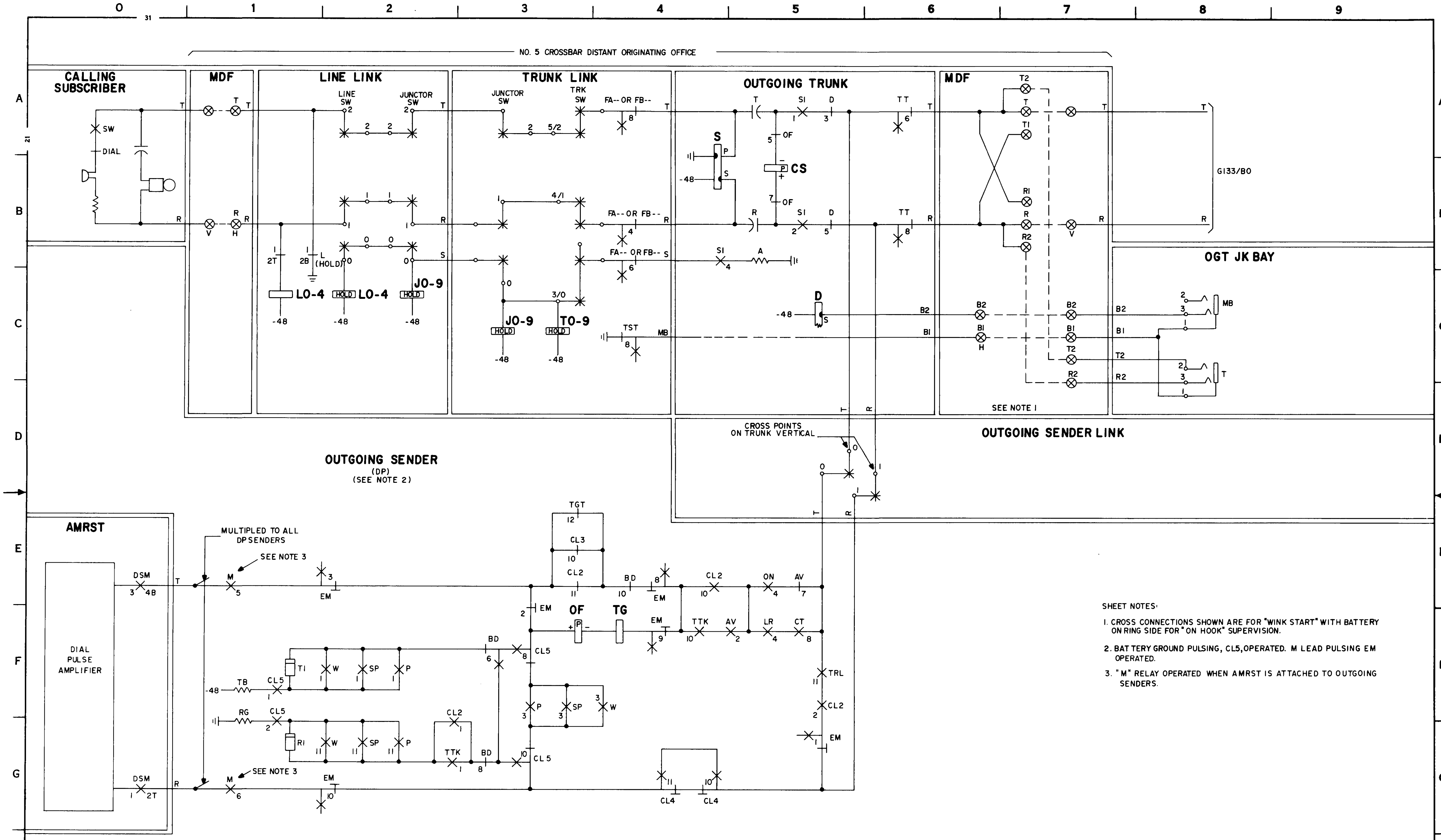
REGISTRATION OF TRUNK NUMBER IN
INCOMING REGISTER
(DP)

PRINTED IN U.S.A.

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)



SHEET NOTES:

1. CROSS CONNECTIONS SHOWN ARE FOR "WINK START" WITH BATTERY ON RING SIDE FOR "ON HOOK" SUPERVISION.
2. BATTERY GROUND PULSING, CL5, OPERATED. M LEAD PULSING EM OPERATED.
3. "M" RELAY OPERATED WHEN AMRST IS ATTACHED TO OUTGOING SENDERS.

ISSUE
5

SFD-10-01-G132

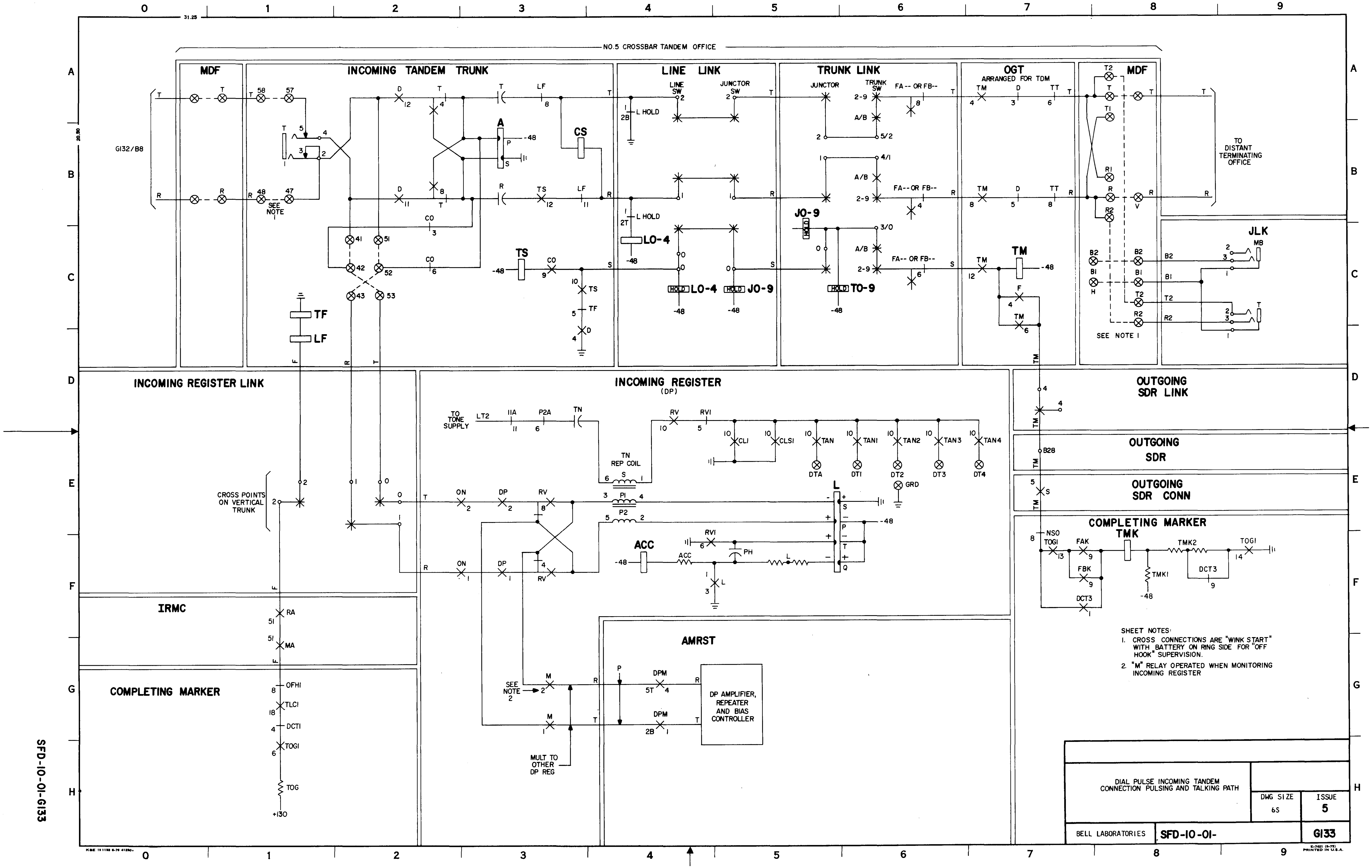
DIAL PULSE OUTGOING CONNECTION
PULSING AND TALKING PATH
DISTANT ORIGINATING OFFICE

PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-G132



SHEET NOTES:

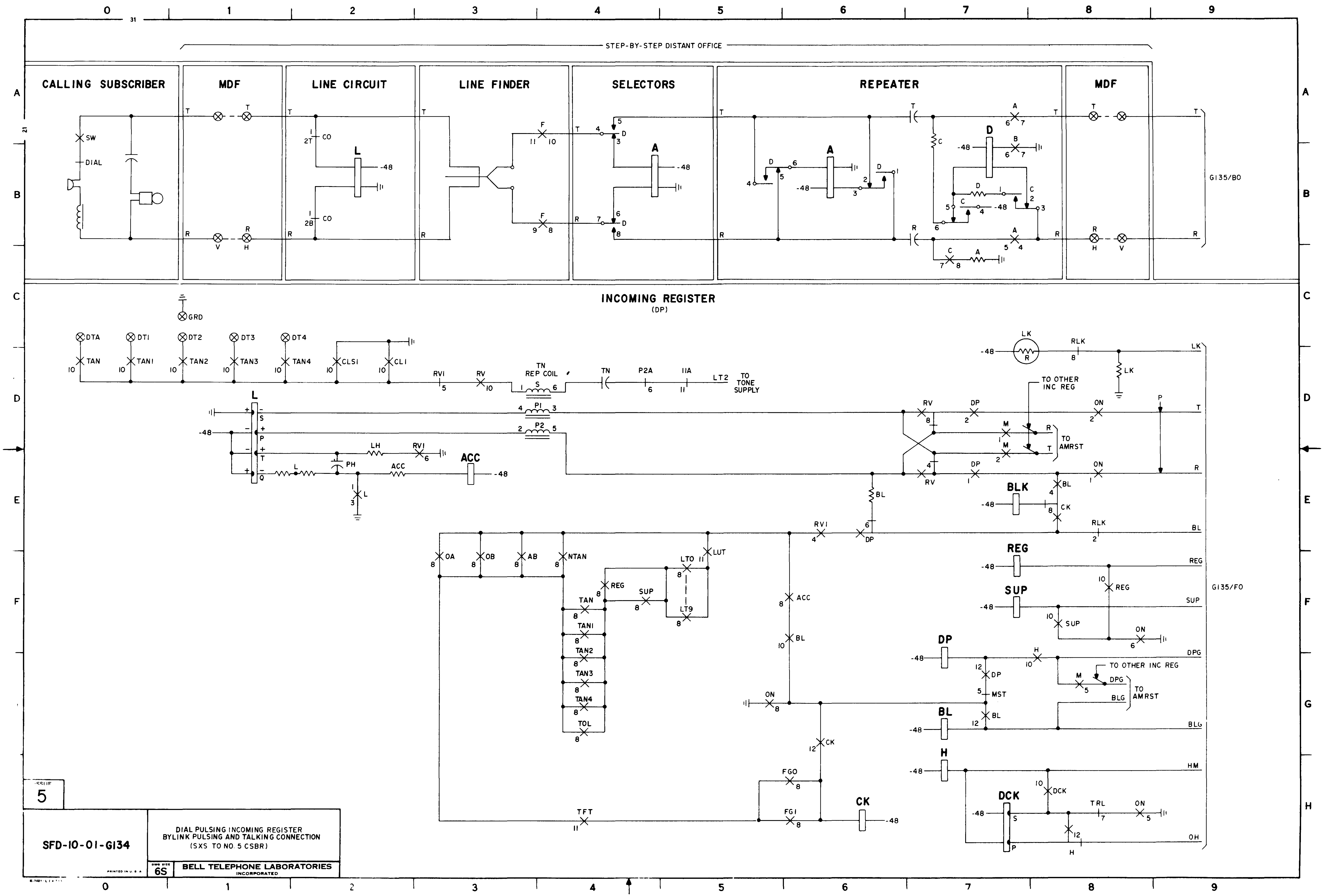
1. CROSS CONNECTIONS ARE "WINK START" WITH BATTERY ON RING SIDE FOR "OFF HOOK" SUPERVISION.
2. "M" RELAY OPERATED WHEN MONITORING INCOMING REGISTER

DIAL PULSE INCOMING TANDEM CONNECTION PULSING AND TALKING PATH

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G133

SFD-10-01-G133



ISSUE
5

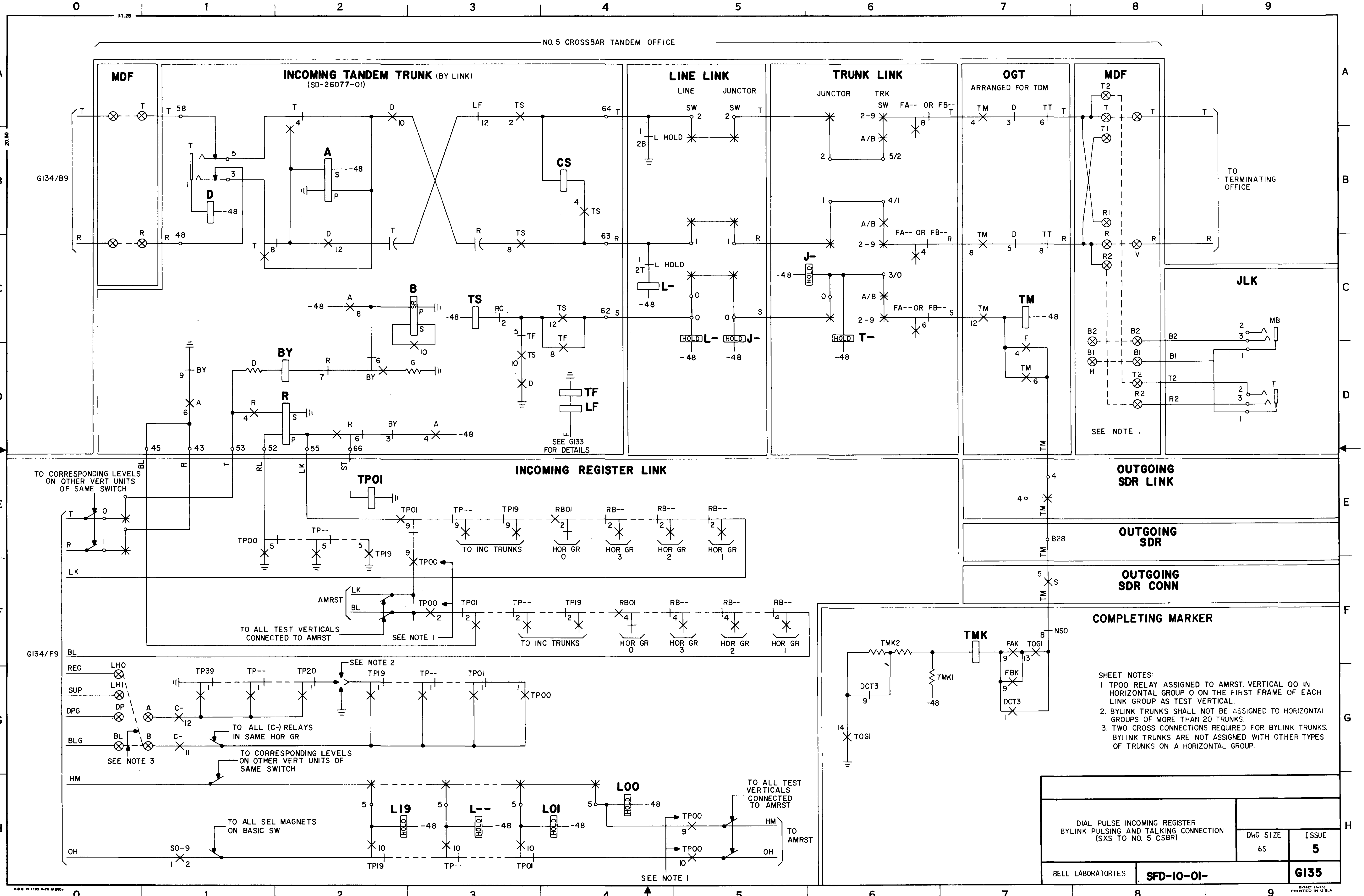
SFD-10-01-G134

DIAL PULSING INCOMING REGISTER
BYLINK PULSING AND TALKING CONNECTION
(SXS TO NO. 5 CSBR)

PRINTED IN U. S. A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED



SHEET NOTES:

1. TP00 RELAY ASSIGNED TO AMRST. VERTICAL 00 IN HORIZONTAL GROUP 0 ON THE FIRST FRAME OF EACH LINK GROUP AS TEST VERTICAL.
2. BYLINK TRUNKS SHALL NOT BE ASSIGNED TO HORIZONTAL GROUPS OF MORE THAN 20 TRUNKS.
3. TWO CROSS CONNECTIONS REQUIRED FOR BYLINK TRUNKS. BYLINK TRUNKS ARE NOT ASSIGNED WITH OTHER TYPES OF TRUNKS ON A HORIZONTAL GROUP.

DIAL PULSE INCOMING REGISTER
BYLINK PULSING AND TALKING CONNECTION
(SXS TO NO. 5 CSBR)

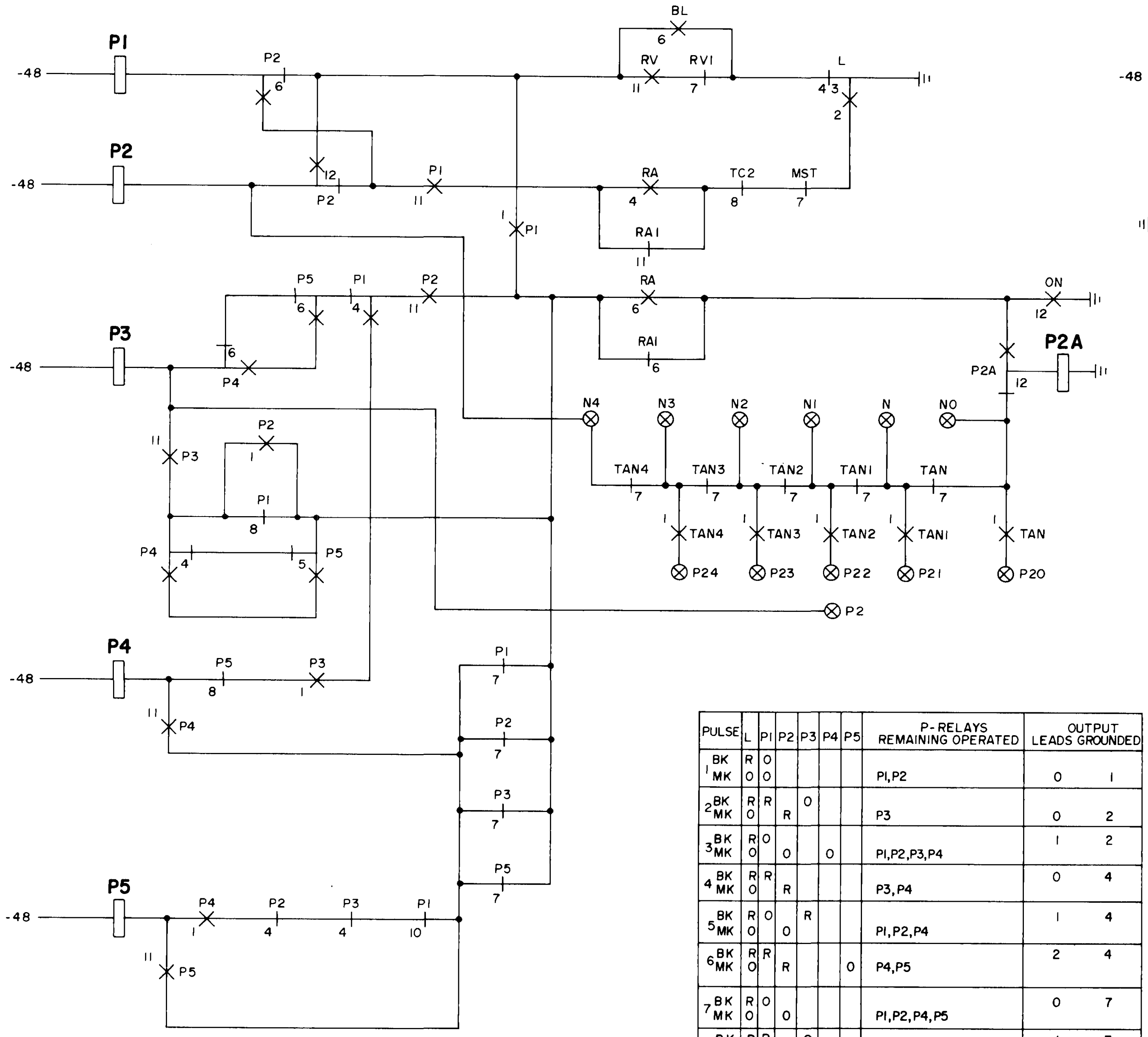
DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G135

SFD-10-01-G135

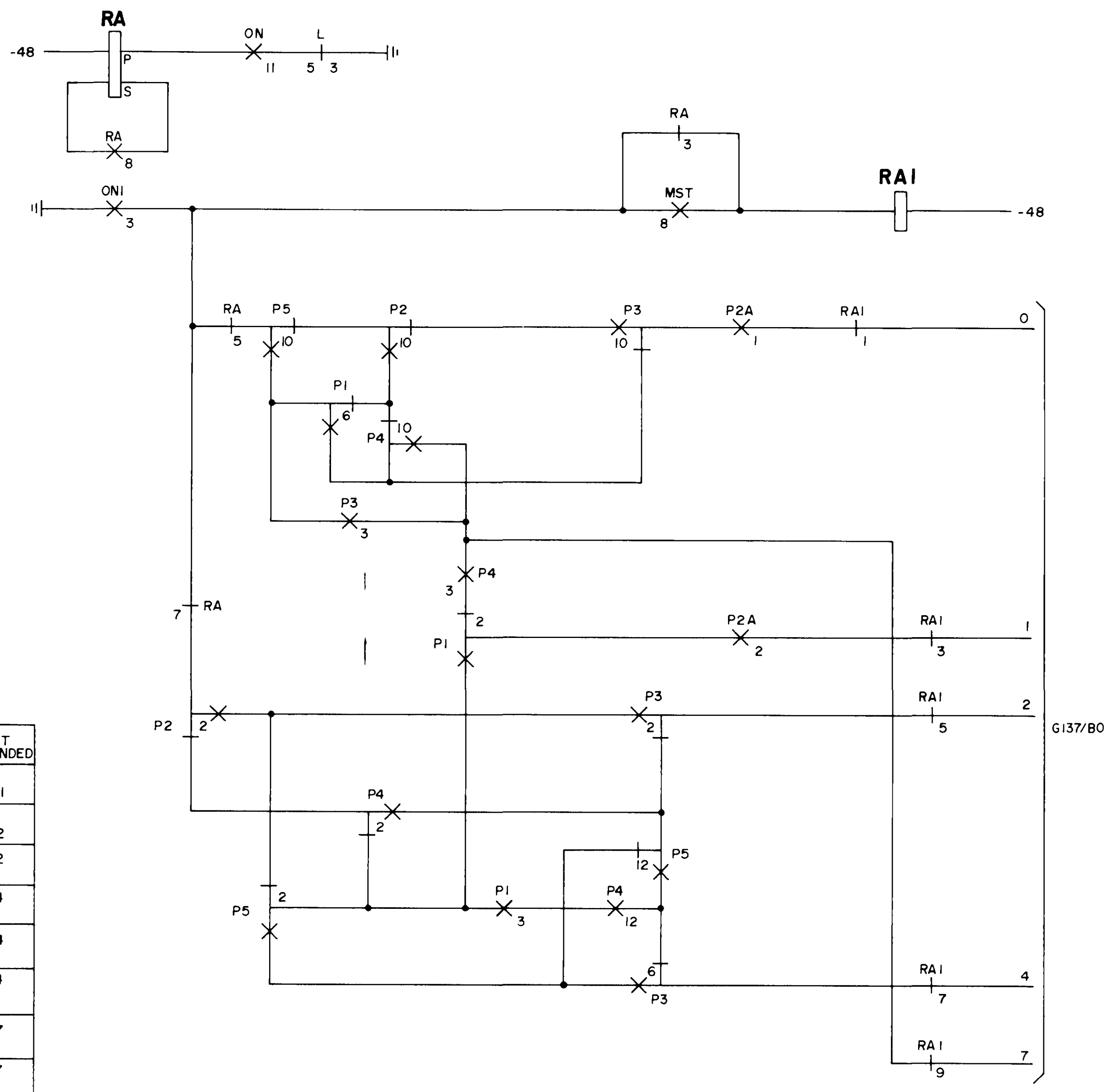
INCOMING REGISTER
(DP)

PULSE COUNTING



PULSE	L	P1	P2	P3	P4	P5	P-RELAYS REMAINING OPERATED	OUTPUT LEADS GROUNDED
1 BK	R	O						
MK	O	O					P1,P2	0 1
2 BK	R	R		O				
MK	O		R				P3	0 2
3 BK	R	O						1 2
MK	O		O		O		P1,P2,P3,P4	
4 BK	R	R						0 4
MK	O		R				P3,P4	
5 BK	R	O		R				1 4
MK	O		O				P1,P2,P4	
6 BK	R	R						2 4
MK	O		R			O	P4,P5	
7 BK	R	O						0 7
MK	O		O				P1,P2,P4,P5	
8 BK	R	R		O				1 7
MK	O		R				P3,P4,P5	
9 BK	R	O						2 7
MK	O		O		R		P1, P2,P3,P5	
10 BK	R	R						4 7
MK	O		R				P3,P5	
11 BK	R	O		R				0
MK	O		O				P1,P2,P4	
12 BK	R	R						0
MK	O		R				P3	

PULSE TRANSLATION



ISSUE
5

SFD-10-01-G136

DP INCOMING REGISTER
PULSE COUNTING & TRANSLATION

PRINTED IN U.S.A.

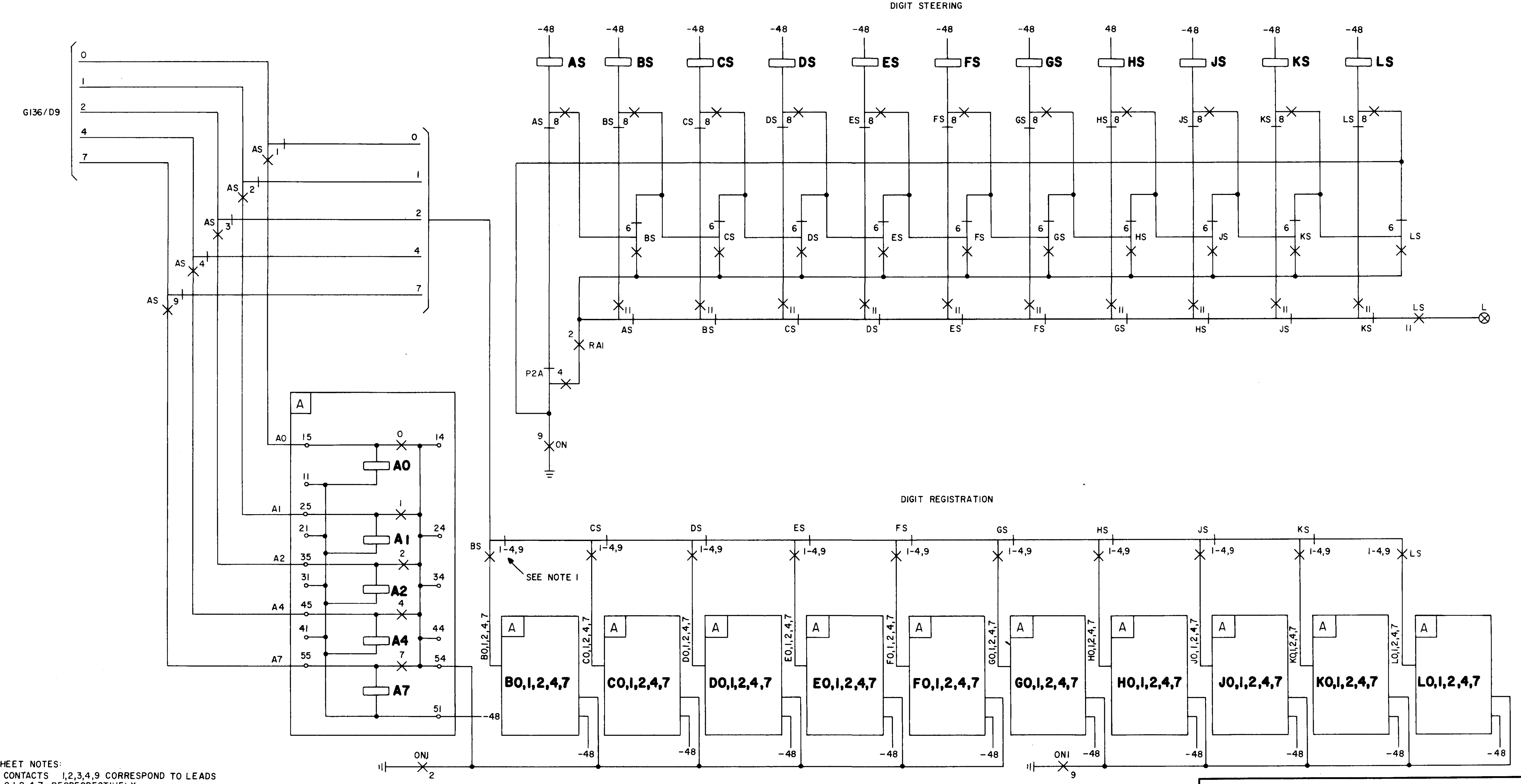
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-G136

INCOMING REGISTER

(DP)

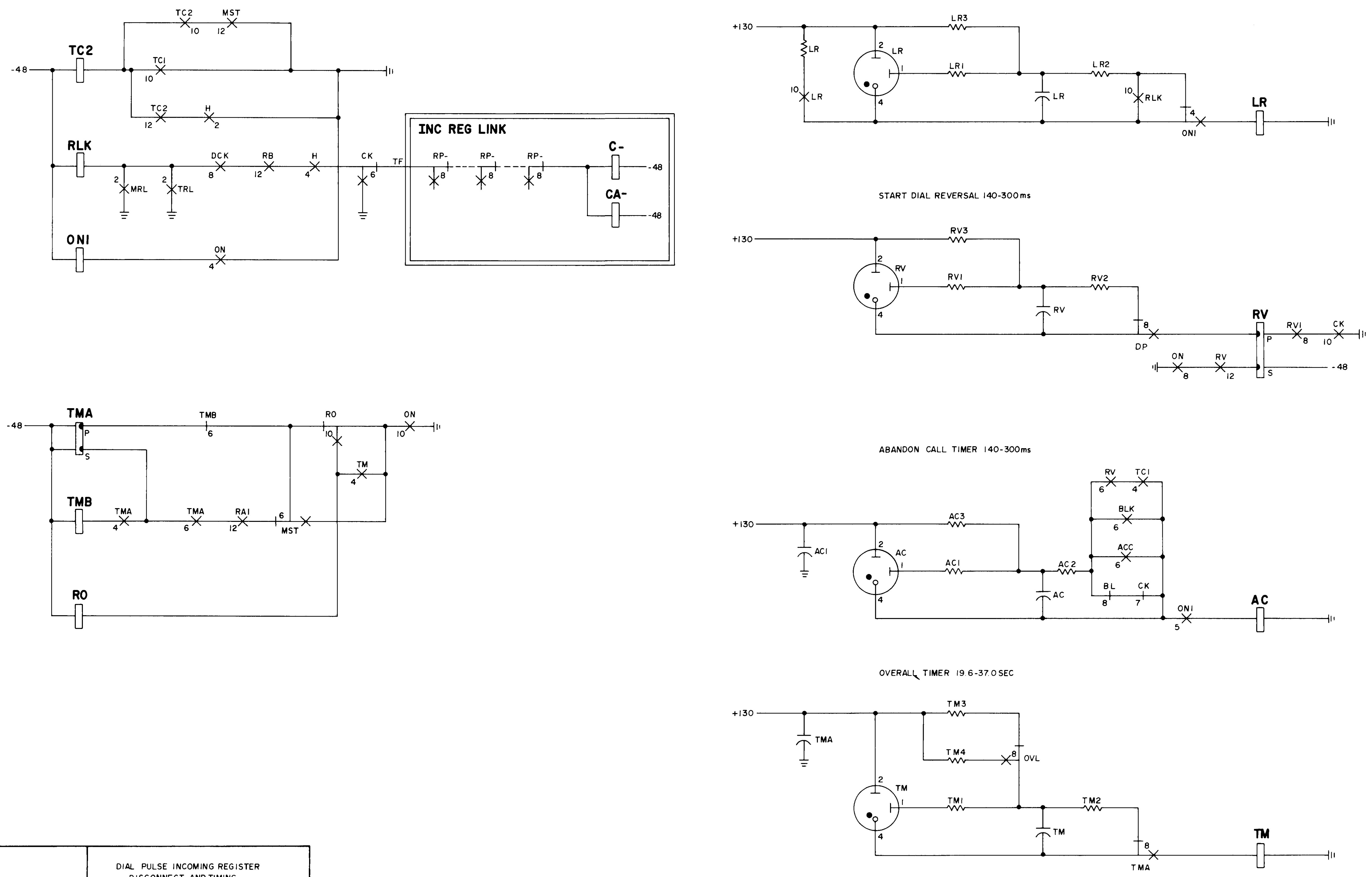


SHEET NOTES:
1. CONTACTS 1,2,3,4,9 CORRESPOND TO LEADS
0,1,2,4,7 RESPESPECTIVELY.

DP INCOMING REGISTER DIGIT STEERING AND REGISTRATION	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G137

INCOMING REGISTER

(DP)



ISSUE

5

SFD-10-01-G138

DIAL PULSE INCOMING REGISTER
DISCONNECT AND TIMING
CIRCUITS

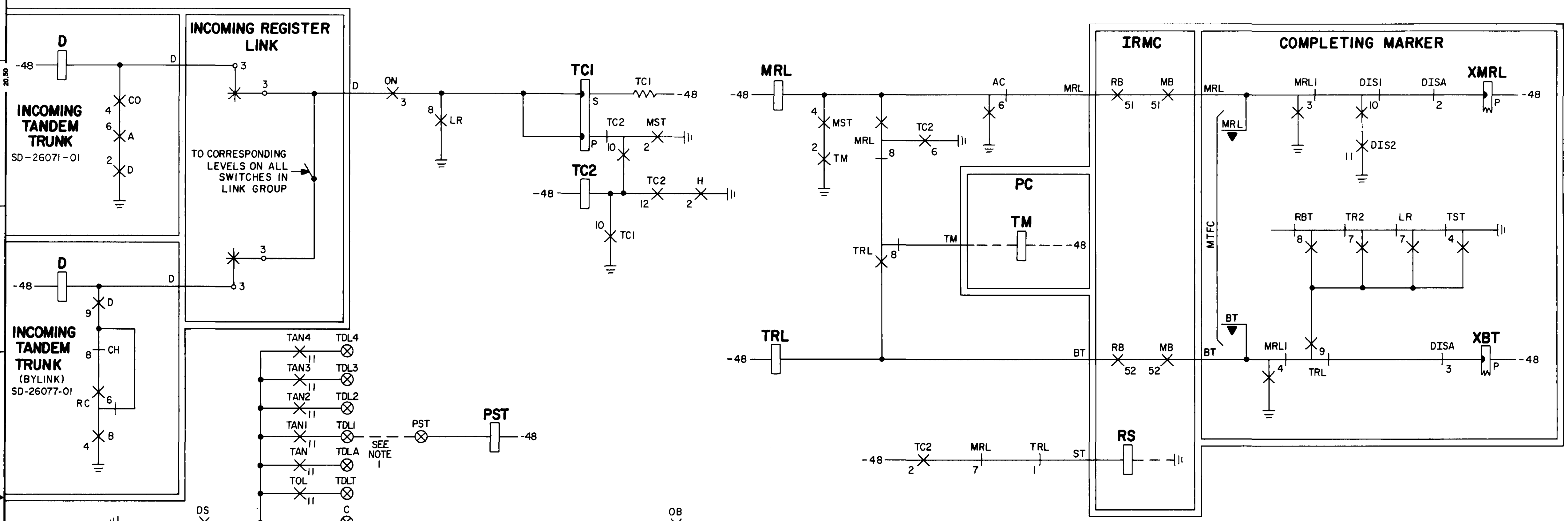
6S

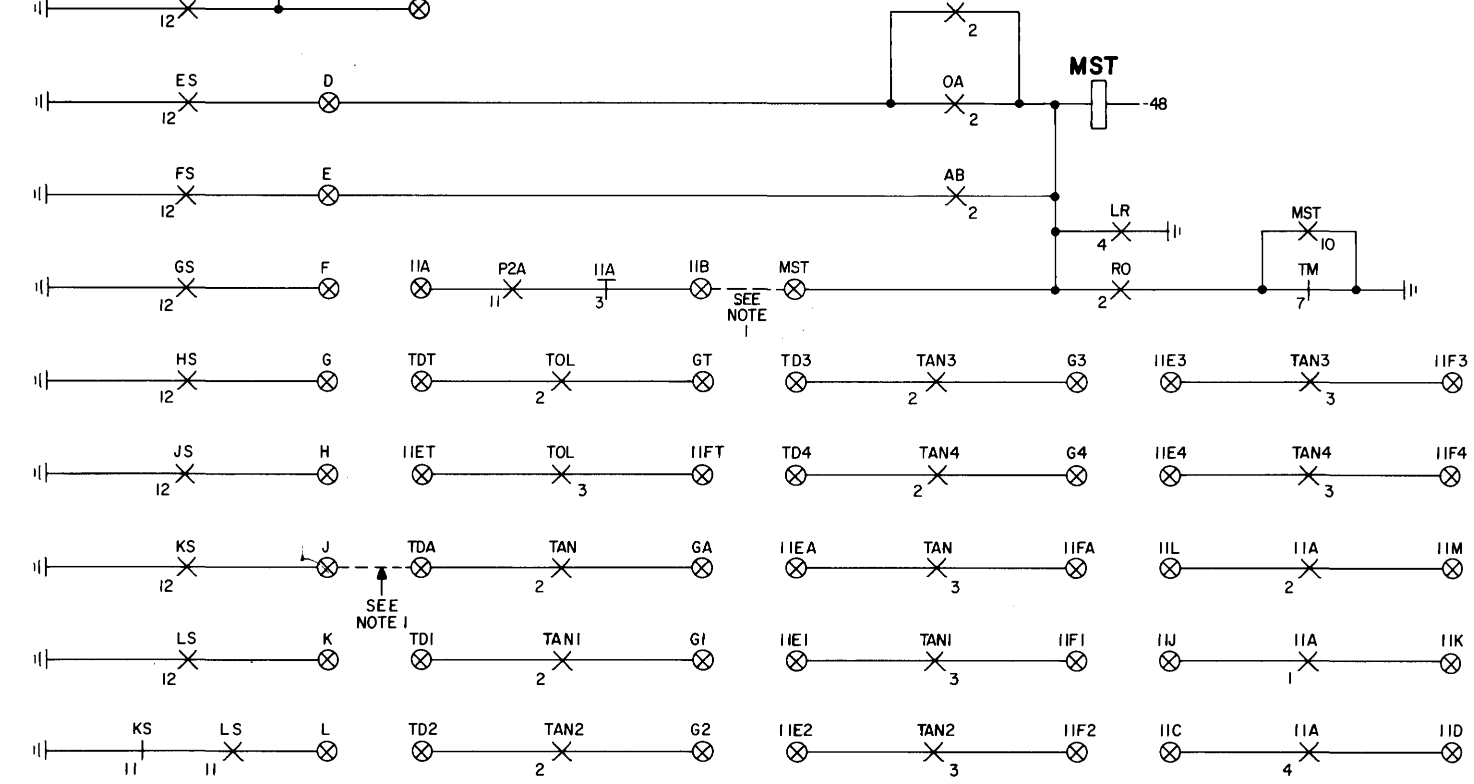
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-G138

INCOMING REGISTER
(DP)





TYPICAL MARKER START TREATMENTS

TYPE OF CALL	MARKER STARTS AFTER	TRK CLASS	TRANSLATION RELAYS OPERATED	DIGITS DIALED	REMARKS
TANDEM THRU TO DISTANT OFFICE	7 DIGITS	TAN		ABC1234	ALWAYS STARTS MARKER AFTER 7 DIGITS
TANDEM THRU TO DISTANT OFFICE A DIGIT 5	7 DIGITS	TAN1	TAA TA1 TA4	5BC1234	A DIGIT TRANSLATION
TANDEM THRU TO DISTANT OFFICE A DIGIT 8	7 OR 8 DIGITS	TAN 1	TAA TA1 TA7	8BC1234(5)	A DIGIT TRANSLATION. SOME SUB. NUMBERS HAVE PARTY LETTERS. "H" TERMINAL USED TO START MKR WHEN 8TH DIGIT IS DIALED.
TANDEM THRU TO DISTANT OFFICE A DIGIT 4, B DIGIT 3	5 DIGITS	TAN 2	TAA, TBA TA0, TA4 TB1, TB2	43123	3 DIGIT SUB NUMBERS A AND B DIGIT TRANSLATION 2 DIGIT OFFICE CODE
TANDEM A DIGIT 4, B DIGIT 9	6 DIGITS	TAN 2	TAA,TBA,TAO, TA4,TB2,TB7	491234	ORIGINATING SXS OFFICE USES A DIGIT OF OFFICE CODE
VACANT CODE	1 DIGIT	TAN 1 TAN 2	TAA,TAC,TA2	2XXXXXX	MKR SETS RINGING SWITCH TO RETURN OVERFLOW SIGNAL TO TRK

SHEET NOTES:

1. CROSS CONNECTION DETERMINED BY OFFICE RECORDS.

DIAL PULSE INCOMING REGISTER
MARKER START AND RELEASE

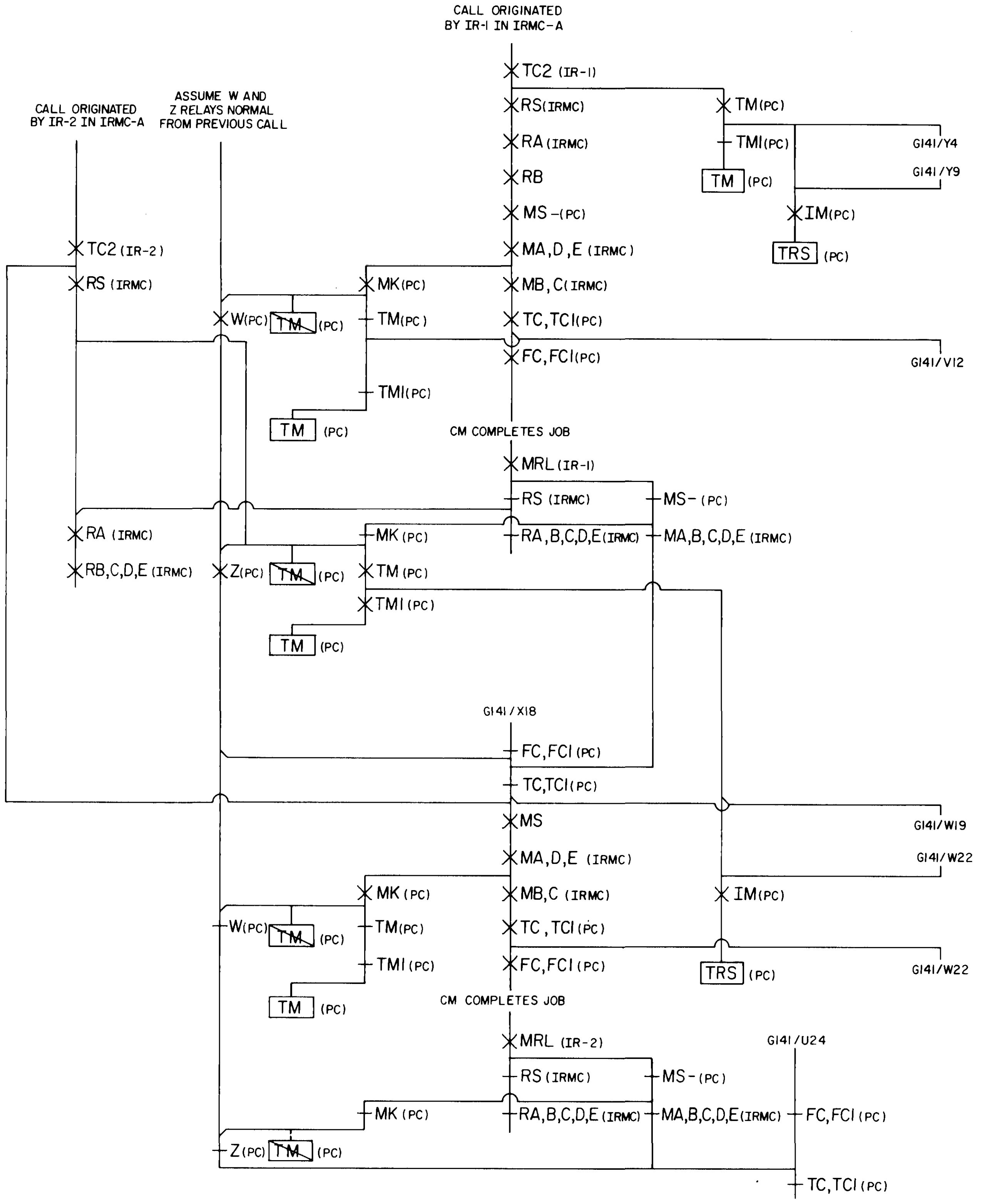
DWG SIZE	ISSUE
6S	5

BELL LABORATORIES · SFD-10-01- G139

SFD-10-01-G139

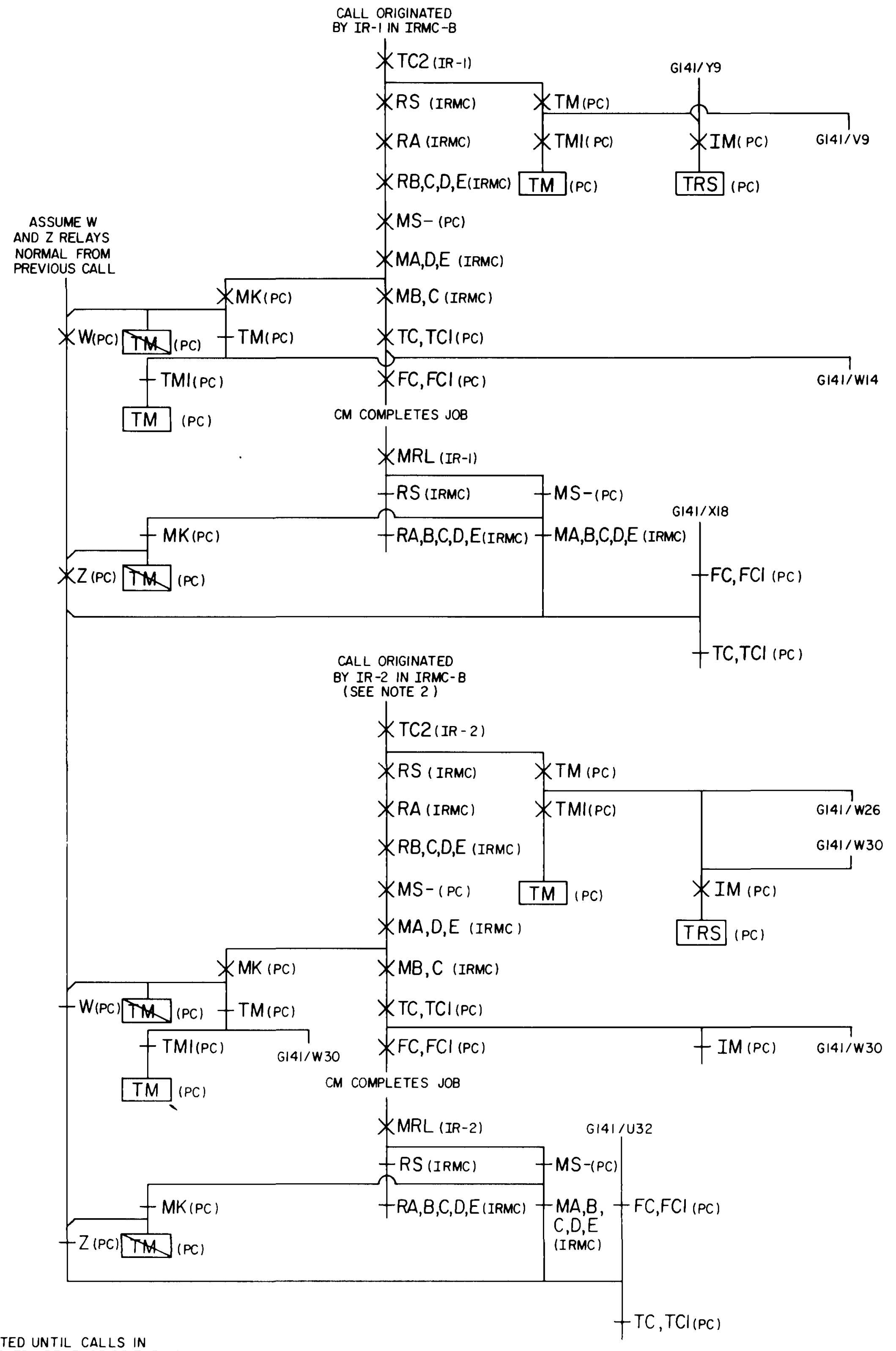
INCOMING REGISTER MARKER CONNECTOR-A

(ALL REFERENCES ARE TO INCOMING REGISTERS AND PC ASSOCIATED WITH THIS CONNECTOR)



INCOMING REGISTER MARKER CONNECTOR-B

(ALL REFERENCES ARE TO INCOMING REGISTERS AND PC ASSOCIATED WITH THIS CONNECTOR)



SHEET NOTES:

1. THE CALL FROM (IR-2) IN (IRMC-A) IS GATED UNTIL CALLS IN CONNECTORS B AND C HAVE BEEN HANDLED. RELEASE OF THE FC, FCI RELAYS IN THE (PC) BY THE (MTRC) UNGATES (IRMC-A).
2. (IRMC-B) WAS UNGATED (FC, FCI RELAYS RELEASE BY MTRC) BEFORE A SECOND CALL WAS ORIGINATING.

ISSUE
5

SFD-10-01-G140

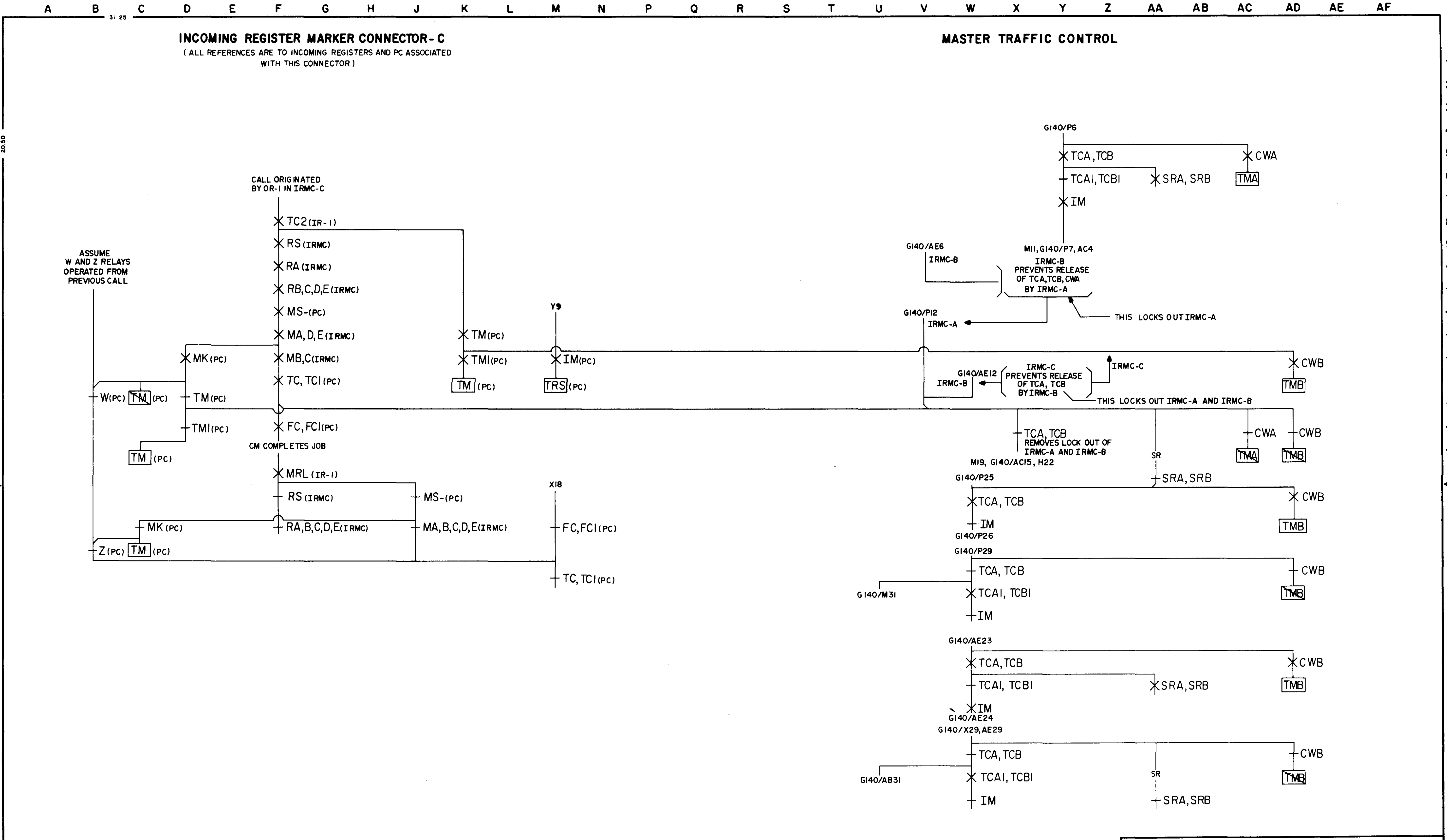
SEQUENCE CHART
MASTER TRAFFIC CONTROL

PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)



SEQUENCE CHART
MASTER TRAFFIC CONTROL

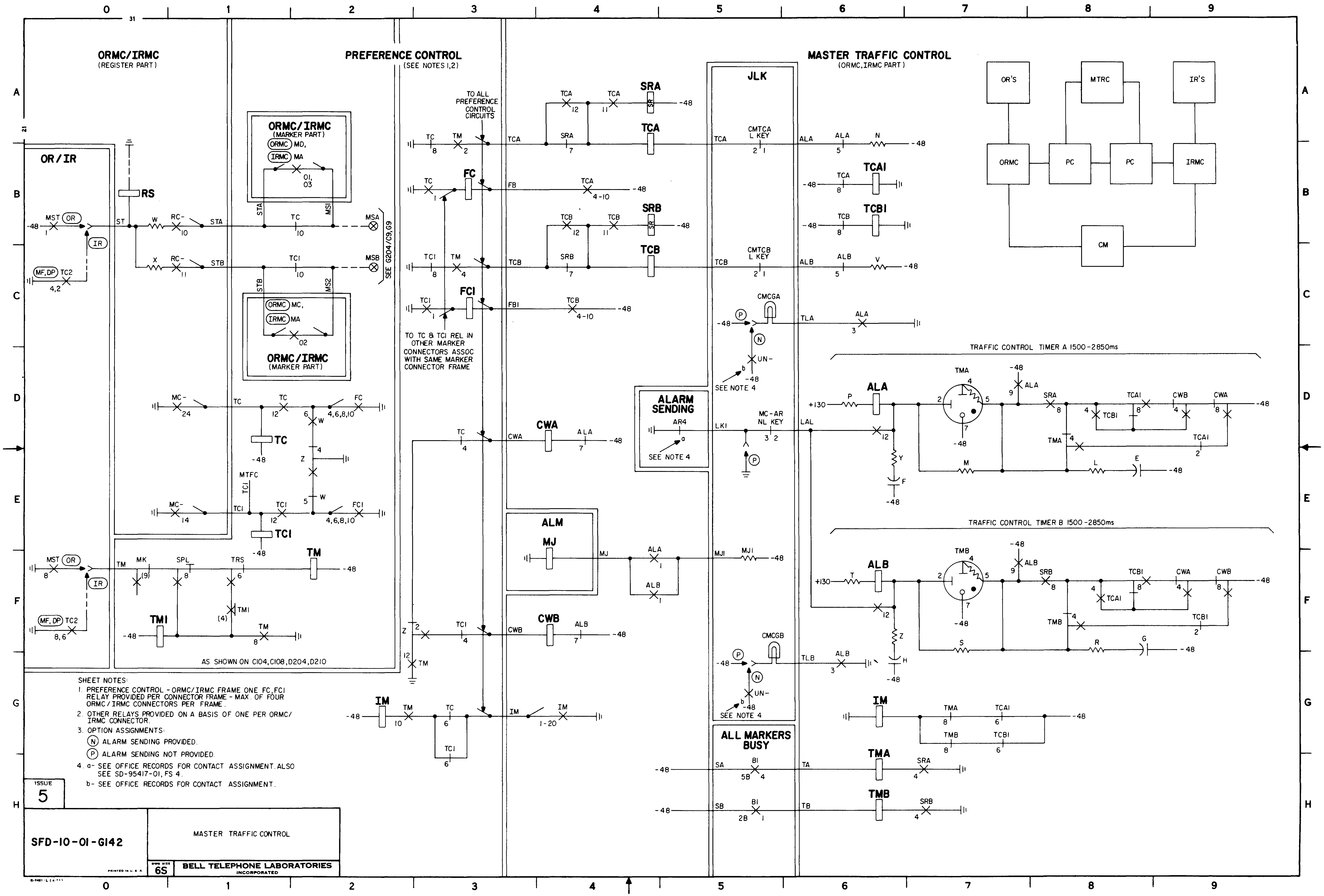
DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G141

SFD-10-01-G141

BRUNING 44-131 28142

E-7421-B (6-75) PRINTED IN U.S.A.



SHEET NOTES:
1. PREFERENCE CONTROL - ORMC/IRMC FRAME ONE FC,FCI RELAY PROVIDED PER CONNECTOR FRAME - MAX. OF FOUR ORMC/IRMC CONNECTORS PER FRAME.
2. OTHER RELAYS PROVIDED ON A BASIS OF ONE PER ORMC/IRMC CONNECTOR.
3. OPTION ASSIGNMENTS:
Ⓝ ALARM SENDING PROVIDED.
Ⓟ ALARM SENDING NOT PROVIDED.
4. a- SEE OFFICE RECORDS FOR CONTACT ASSIGNMENT. ALSO SEE SD-95417-01, FS 4.
b- SEE OFFICE RECORDS FOR CONTACT ASSIGNMENT.

ISSUE
5

SFD-10-01-G142

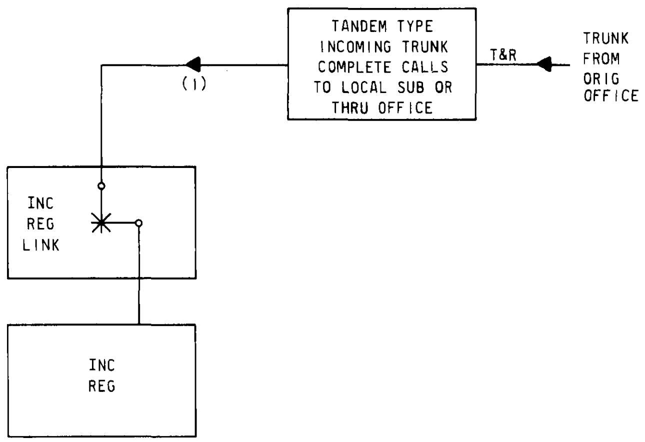
MASTER TRAFFIC CONTROL

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

ESTABLISHING TANDEM SWITCHING CONNECTION


TANDEM TYPE INCOMING TRUNK COMPLETE CALLS TO LOCAL SUB OR THRU OFFICE
T&R
TRUNK FROM ORIG OFFICE
(1)
INC REG LINK
INC REG

INDEX

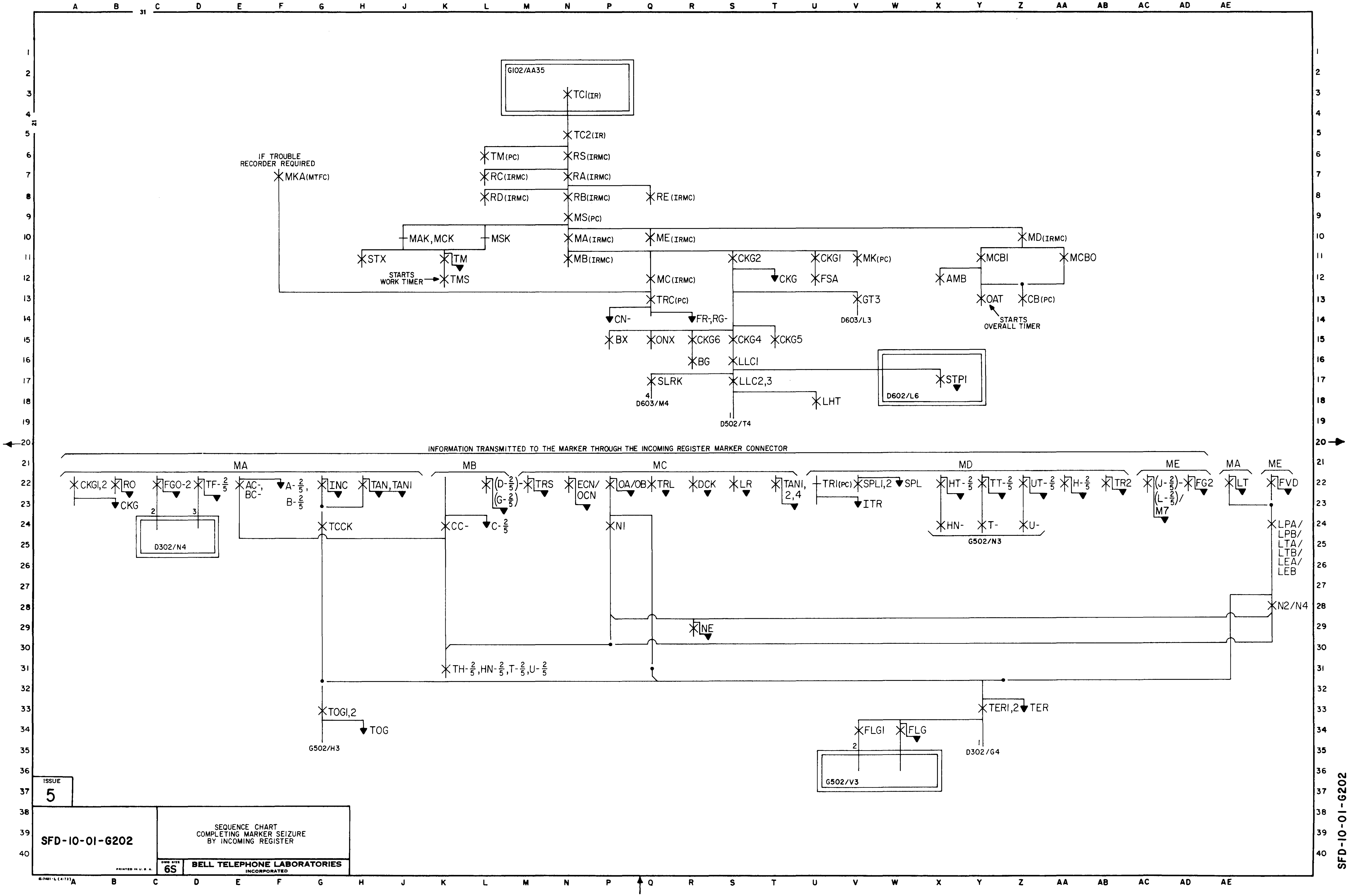
PAGE NO.	TITLE
G201	PART G2 - CONNECTION TO COMPLETING MARKER
G202	SEQUENCE CHART - COMPLETING MARKER SEIZURE BY INCOMING REGISTER.
G203	RESERVED
G204	COMPLETING MARKER PREFERANCE AND SEIZURE.
G205	COMPLETING MARKER PREFERANCE AND SEIZURE.
G206	MAKE-BUSY AND INDICATING LEADS.
G207	INCOMING REGISTER AND CONNECTOR CONTROLS.
G208	REGISTRATION OF TRUNK CLASS INFORMATION IN COMPLETING MARKER.
G209	COMPLETING MARKER MISCELLANEOUS CONTROL RELAYS.
G210	INPUTS TO MARKER.
G211	TRUNK LINK FRAME NUMBER INPUT TO MARKER AND "A" DIGIT TRANSLATION.
G212	CALLED NUMBER INPUT FROM REGISTER TO MARKER.
G213	CALLED NUMBER TRANSFER TO SENDER.
G214	REGISTRATION OF HUNDREDS NUMBER IN COMPLETING MARKER (MF REGISTER).
G215	REGISTRATRATION OF TENS NUMBER IN COMPLETING MARKER (MF INC REGISTER).
G216	REGISTRATION OF HUNDREDS NUMBER IN COMPLETING MARKER (DP REGISTER).
G217	REGISTRATION OF TENS NUMBER IN COMPLETING MARKER (DP REGISTER).
G218	REGISTRATION OF UNITS DIGIT IN COMPLETING MARKER.
G219	TEST CALL DIGIT CONTROL
G220	TEST CALL DIGIT CONTROL

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G2
CONNECTION TO COMPLETING MARKER

DWG SIZE	ISSUE	
6S	5	
BELL LABORATORIES	SFD-10-01-	G201



ISSUE
5

SFD-10-01-G202

SEQUENCE CHART
COMPLETING MARKER SEIZURE
BY INCOMING REGISTER

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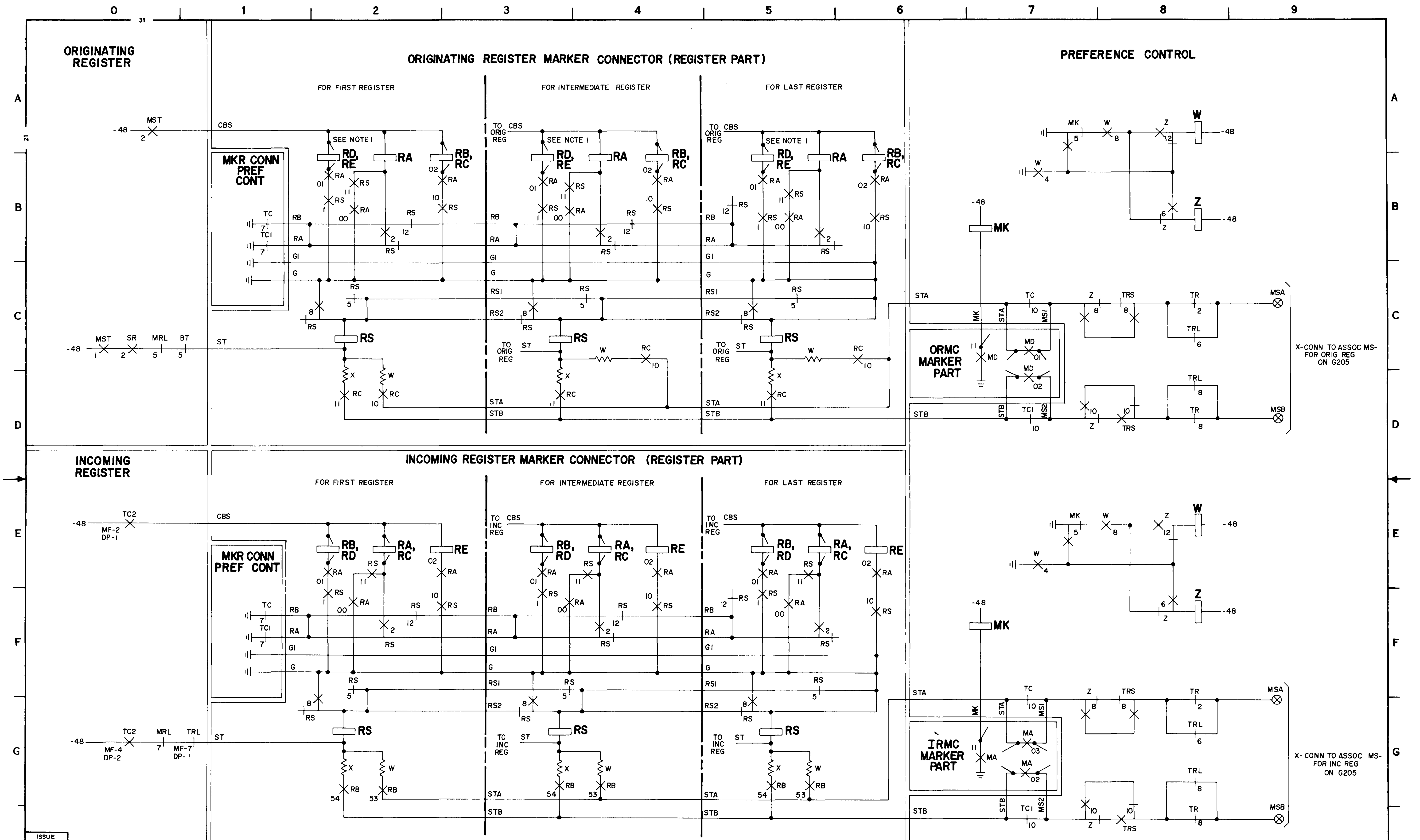
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

E-7481-L (4-73)

SFD-10-01-G202



SHEET NOTES:
1. RD AND RE RELAYS MOUNTED ON THE ORLM FRAME.

ISSUE
5

SFD-10-01-G204

COMPLETING MARKER
PREFERENCE AND SEIZURE

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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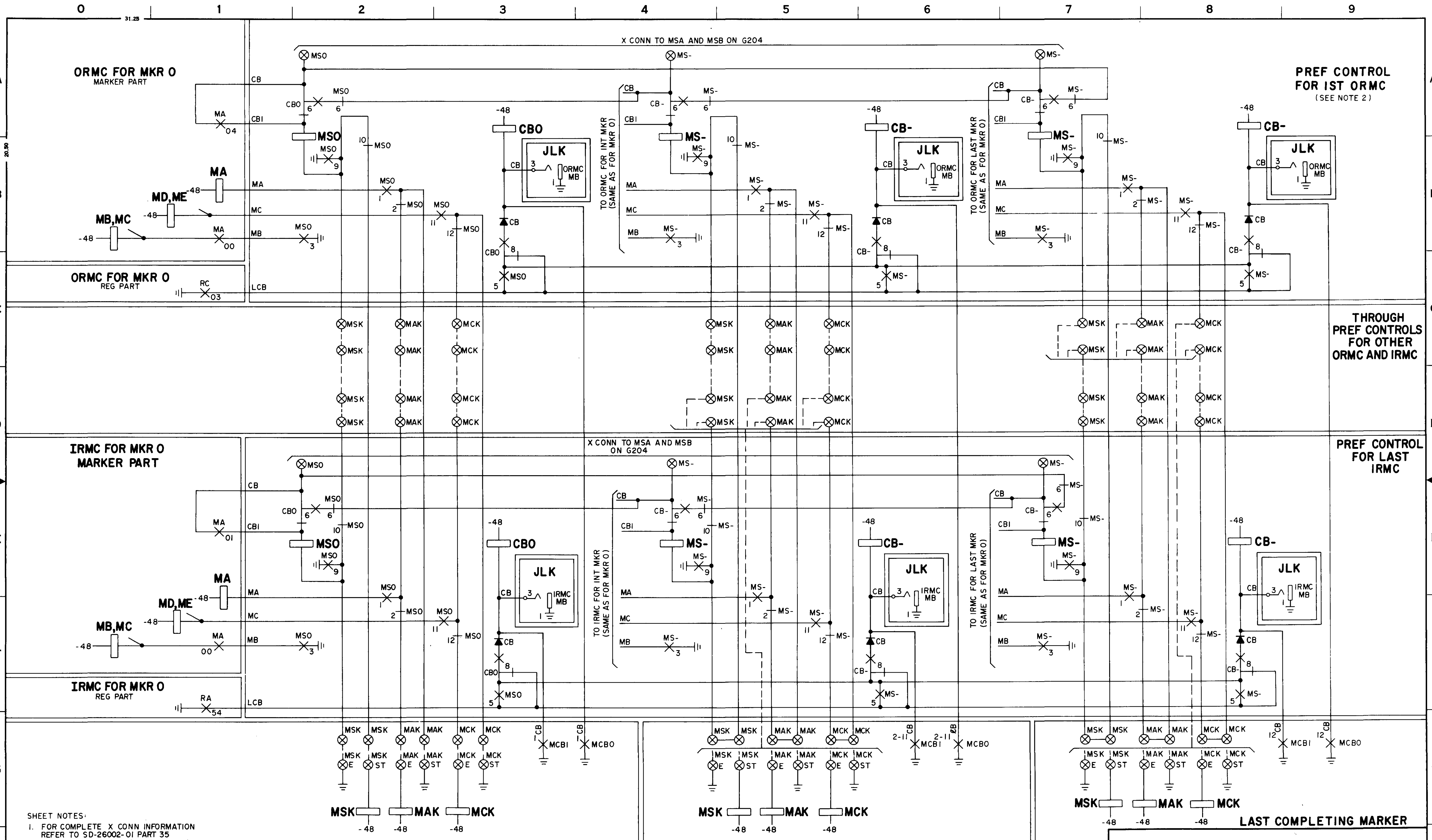
SFD-10-01-G204



ORMC FOR MKR O
MARKER PART
ORMC FOR MKR O
REG PART
X CONN TO MSA AND MSB ON G204
PREF CONTROL FOR 1ST ORMC
(SEE NOTE 2)
TO ORMC FOR INT MKR (SAME AS FOR MKR O)
TO ORMC FOR LAST MKR (SAME AS FOR MKR O)
JLK
ORMC MB
CBO
CB-
MSO
MS-
MA
MD,ME
MB,MC
RC
LCB
THROUGH PREF CONTROLS FOR OTHER ORMC AND IRMC
MSK
MAK
MCK
IRMC FOR MKR O
MARKER PART
IRMC FOR MKR O
REG PART
X CONN TO MSA AND MSB ON G204
PREF CONTROL FOR LAST IRMC
TO IRMC FOR INT MKR (SAME AS FOR MKR O)
TO IRMC FOR LAST MKR (SAME AS FOR MKR O)
IRMC MB
RA
MCBI
MCBO
COMPLETING MARKER O
INTERMEDIATE COMPLETING MARKER
LAST COMPLETING MARKER

SHEET NOTES:

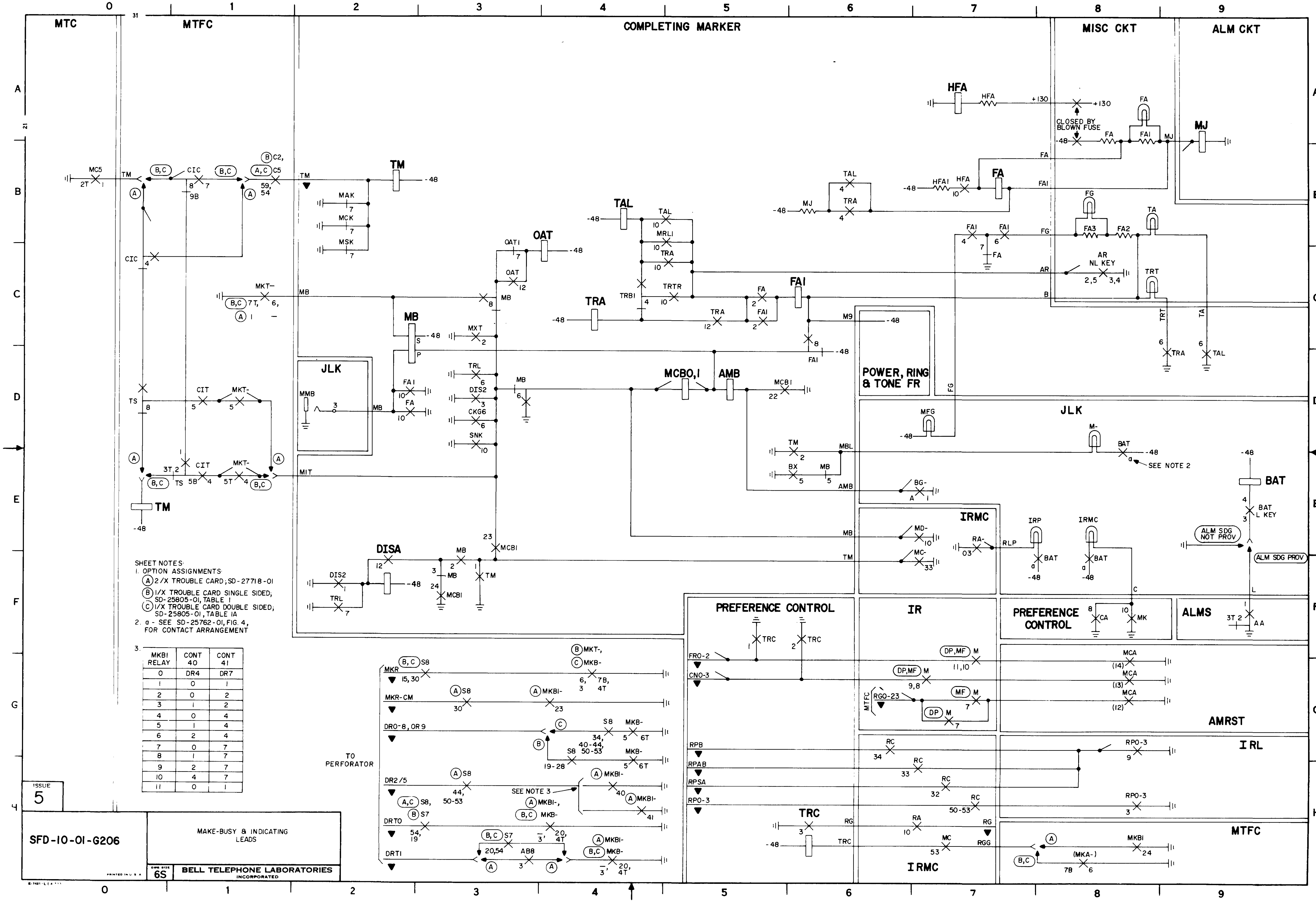
1. FOR COMPLETE X CONN INFORMATION REFER TO SD-26002-01 PART 35 SD-26029-01-NOTE 405 & 405A
2. PREF CKT SHOWN IS APP FIG.7, RATED STD ON ISSUE 10B.

COMPLETING MARKER
PREFERENCE AND SEIZURE

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G205

SFD-10-01-G205



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
2. a - SEE SD-25762-01, FIG. 4, FOR CONTACT ARRANGEMENT
3.

MKBI RELAY	CONT 40	CONT 41
0	DR4	DR7
1	0	1
2	0	2
3	1	2
4	0	4
5	1	4
6	2	4
7	0	7
8	1	7
9	2	7
10	4	7
11	0	1

ISSUE 5

SFD-10-01-G206

MAKE-BUSY & INDICATING LEADS

6S

BELL TELEPHONE LABORATORIES INCORPORATED

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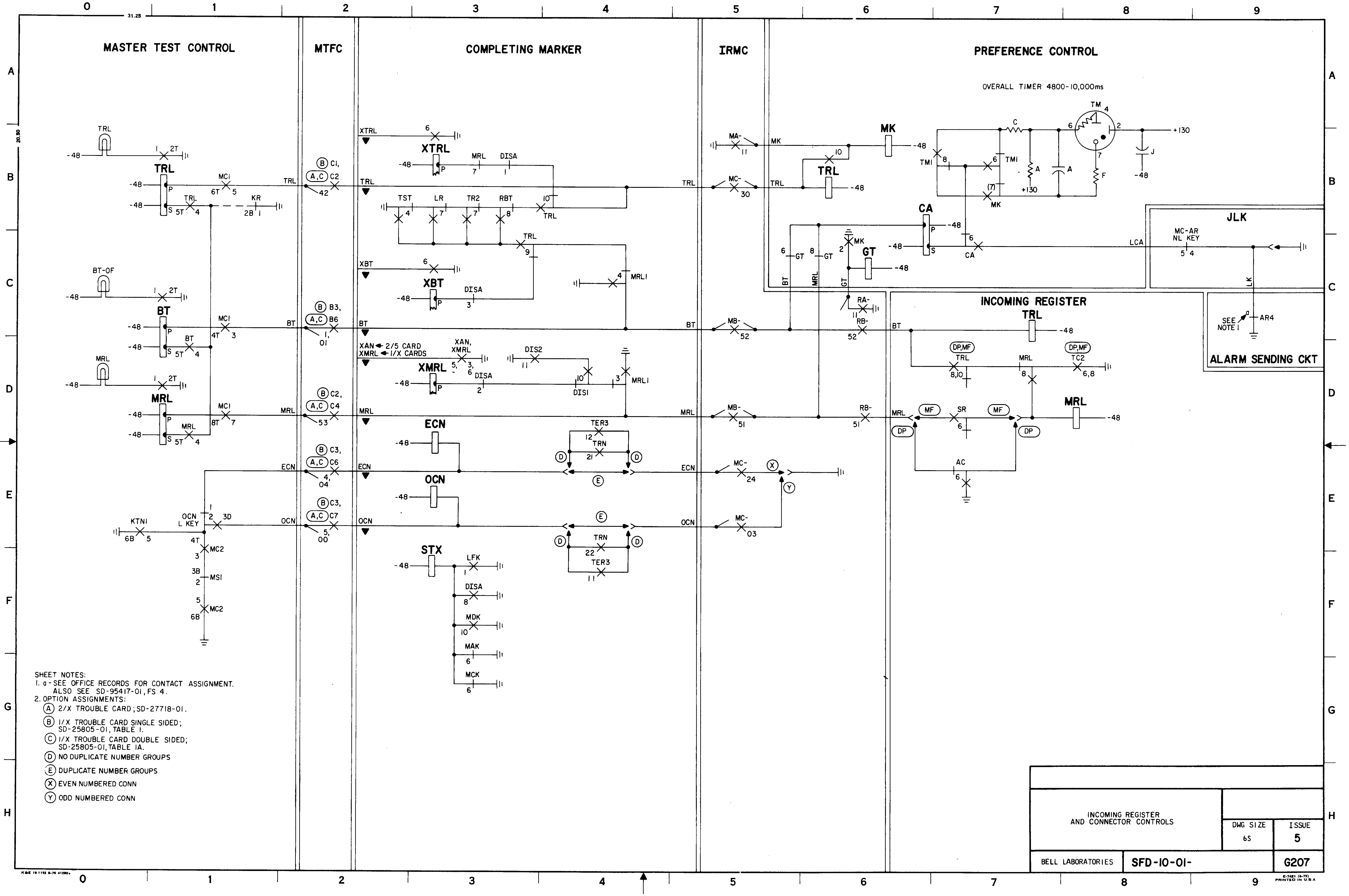


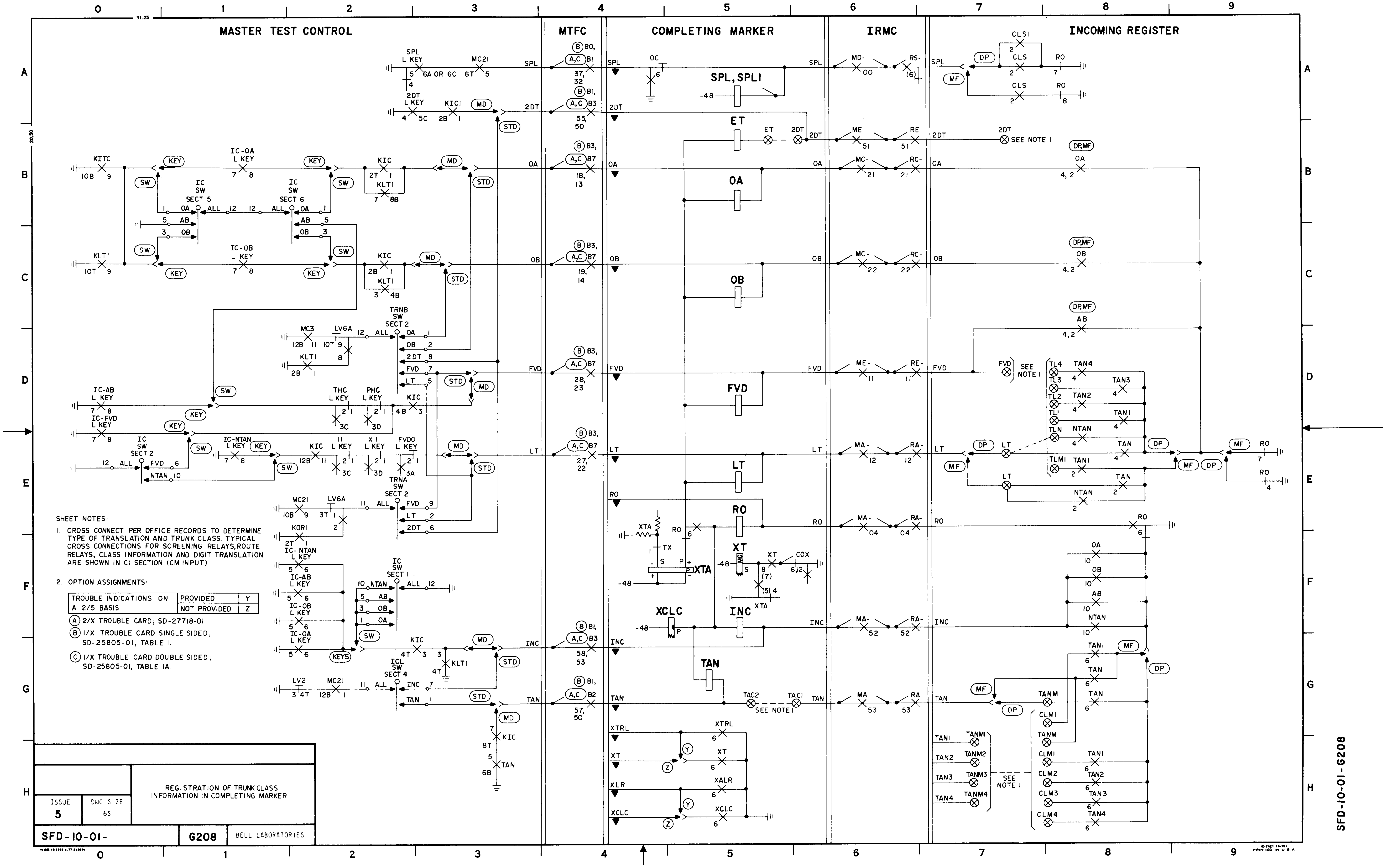
SHEET NOTES:
1. a - SEE OFFICE RECORDS FOR CONTACT ASSIGNMENT. ALSO SEE SD-95417-01, FS 4.
2. OPTION ASSIGNMENTS:
- Ⓐ 2/X TROUBLE CARD; SD-27718-01.
- Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1.
- Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A.
- Ⓓ NO DUPLICATE NUMBER GROUPS
- Ⓔ DUPLICATE NUMBER GROUPS
- Ⓧ EVEN NUMBERED CONN
- Ⓨ ODD NUMBERED CONN

INCOMING REGISTER
AND CONNECTOR CONTROLS

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G207

SFD-10-01-G207



SHEET NOTES:

1. CROSS CONNECT PER OFFICE RECORDS TO DETERMINE TYPE OF TRANSLATION AND TRUNK CLASS. TYPICAL CROSS CONNECTIONS FOR SCREENING RELAYS, ROUTE RELAYS, CLASS INFORMATION AND DIGIT TRANSLATION ARE SHOWN IN C1 SECTION (CM INPUT)

2. OPTION ASSIGNMENTS:

TROUBLE INDICATIONS ON A 2/5 BASIS	PROVIDED	Y
	NOT PROVIDED	Z

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I.

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA.

REGISTRATION OF TRUNK CLASS
INFORMATION IN COMPLETING MARKER

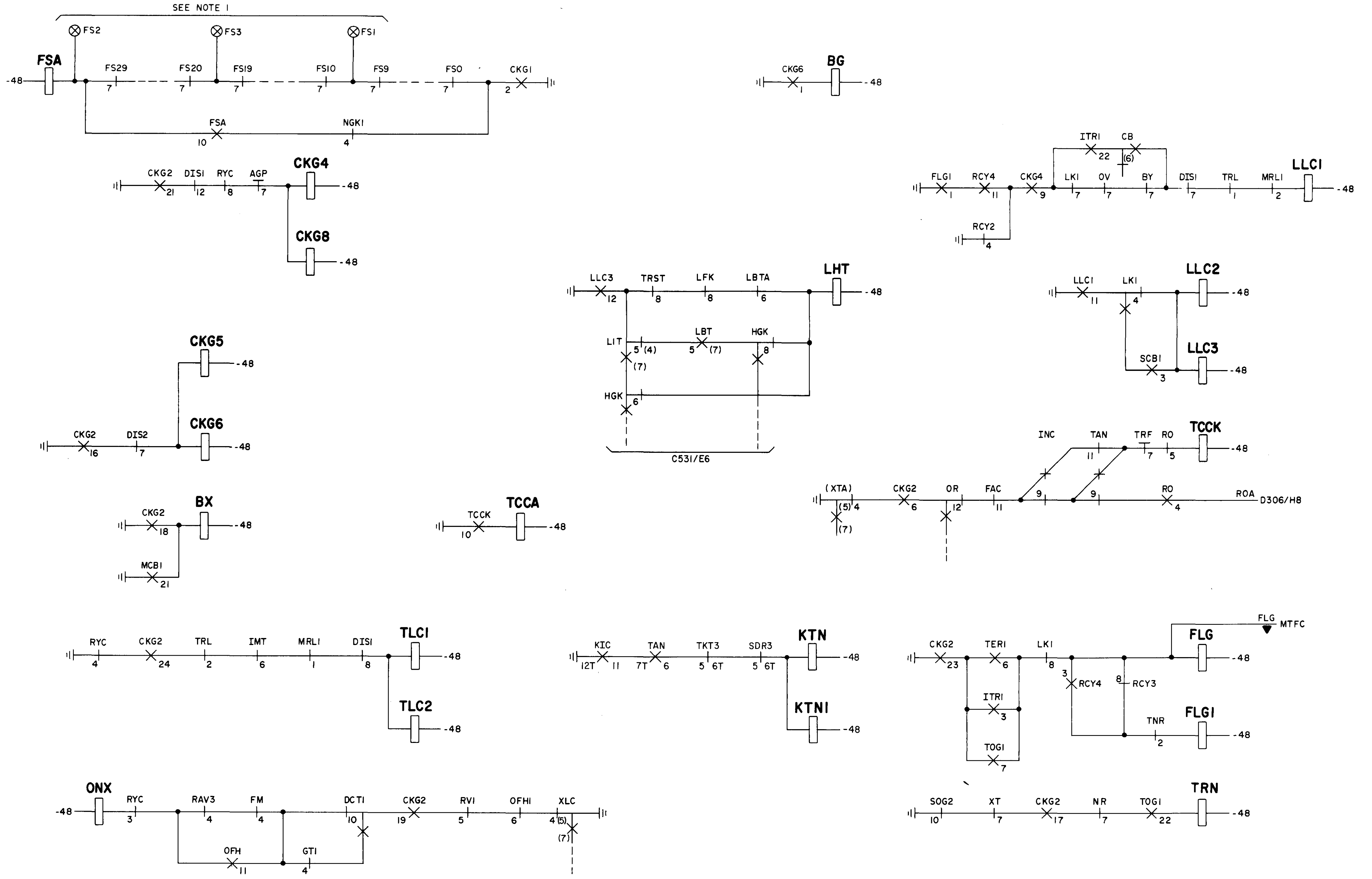
ISSUE 5

DWG SIZE 6S

SFD-10-01- G208

BELL LABORATORIES

COMPLETING MARKER



SHEET NOTES:

1.

SIZE	CONN	TO
MAX OF 10 TL	FS1	FS2
MAX OF 20 TL	FS3	FS2
OVER 20 TL	NONE	

COMPLETING MARKER
MISCELLANEOUS CONTROL RELAYS

DWG SIZE 6S

ISSUE 5

BELL LABORATORIES

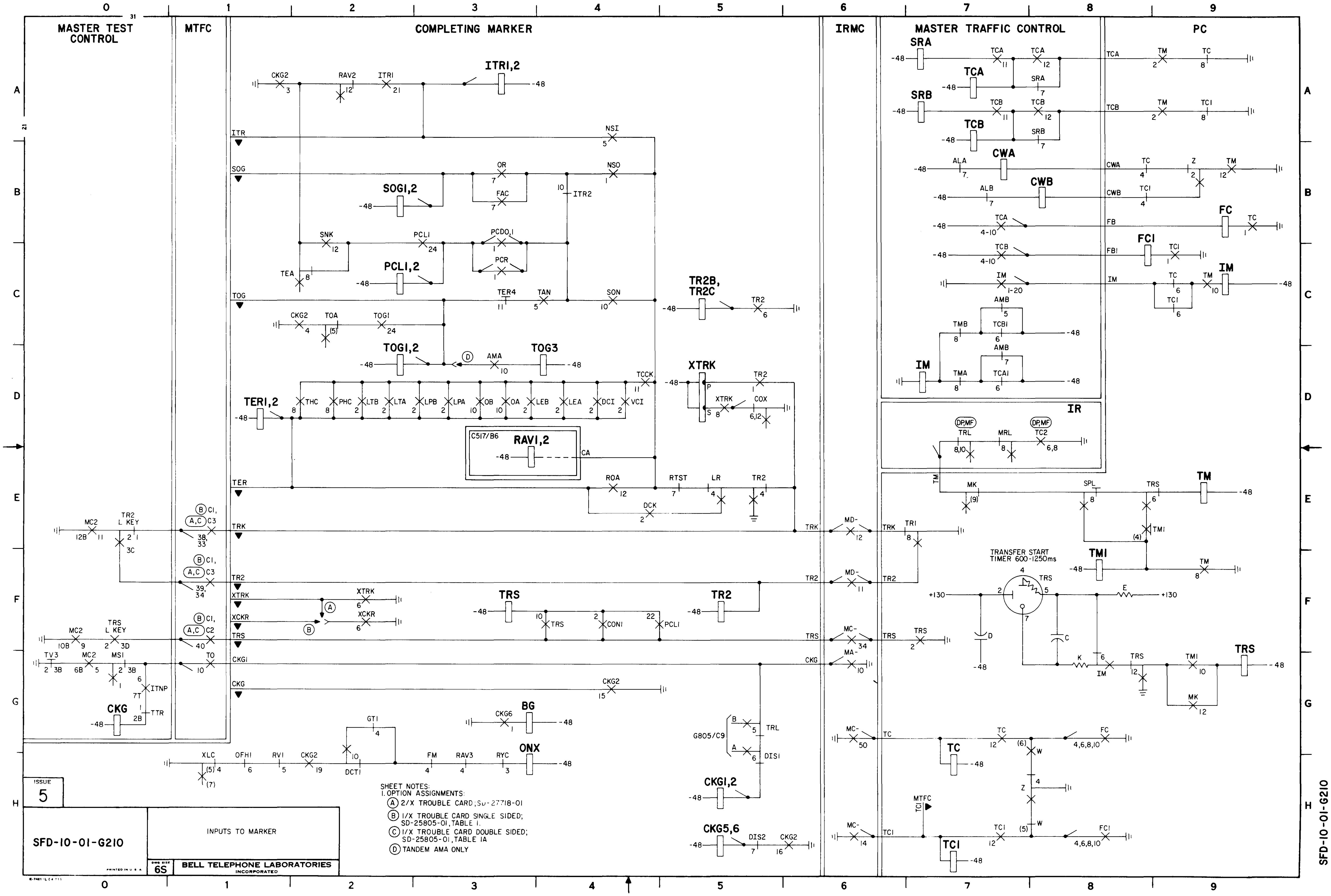
SFD-10-01-

G209

SFD-10-01-G209

KBE 191193 6-76 41290

E-7421 (6-75) PRINTED IN U.S.A.



SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I.
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA
Ⓓ TANDEM AMA ONLY

ISSUE
5

SFD-10-01-G210

INPUTS TO MARKER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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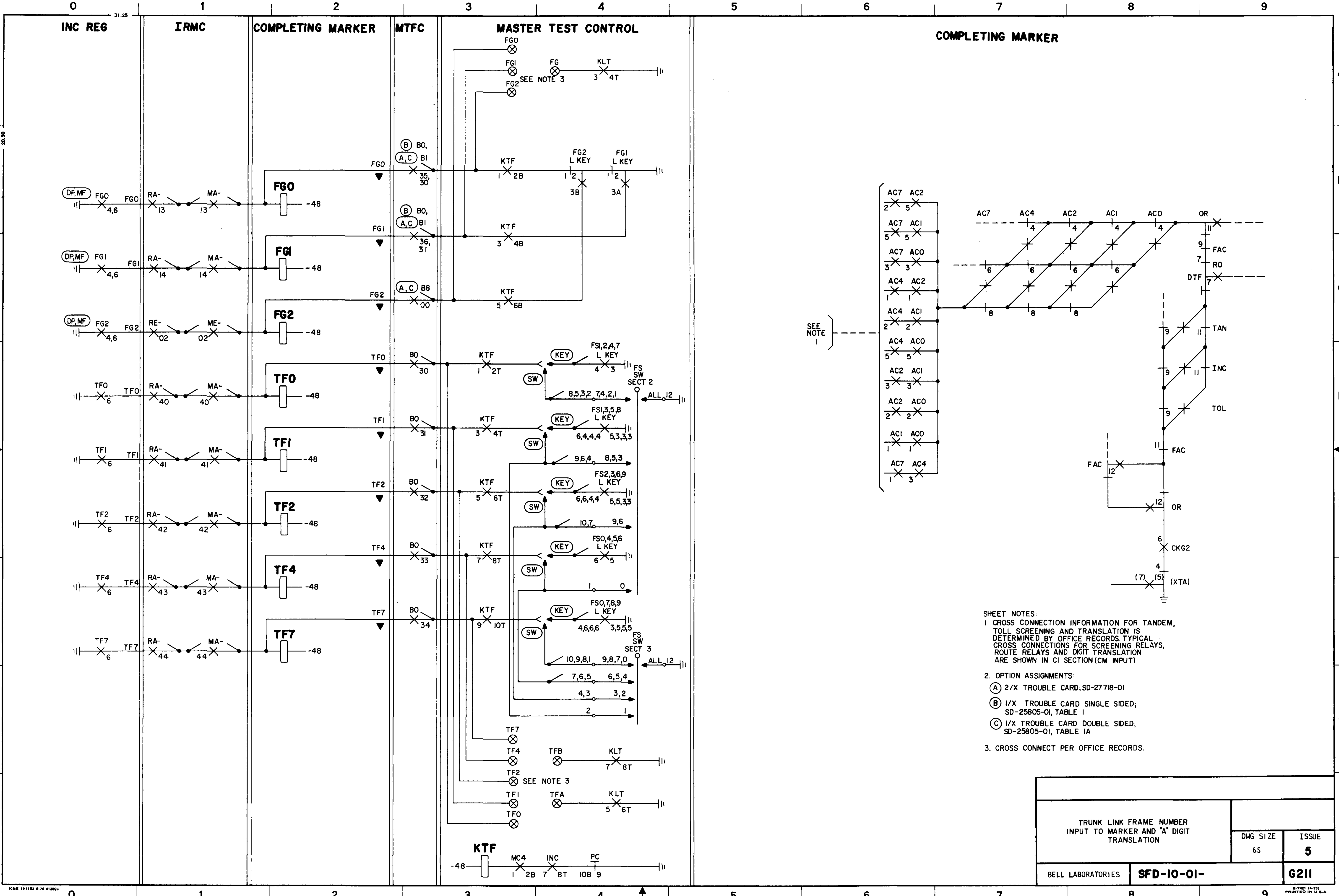
SFD-10-01-G210



SHEET NOTES:

1. CROSS CONNECTION INFORMATION FOR TANDEM, TOLL SCREENING AND TRANSLATION IS DETERMINED BY OFFICE RECORDS. TYPICAL CROSS CONNECTIONS FOR SCREENING RELAYS, ROUTE RELAYS AND DIGIT TRANSLATION ARE SHOWN IN CI SECTION (CM INPUT)

2. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

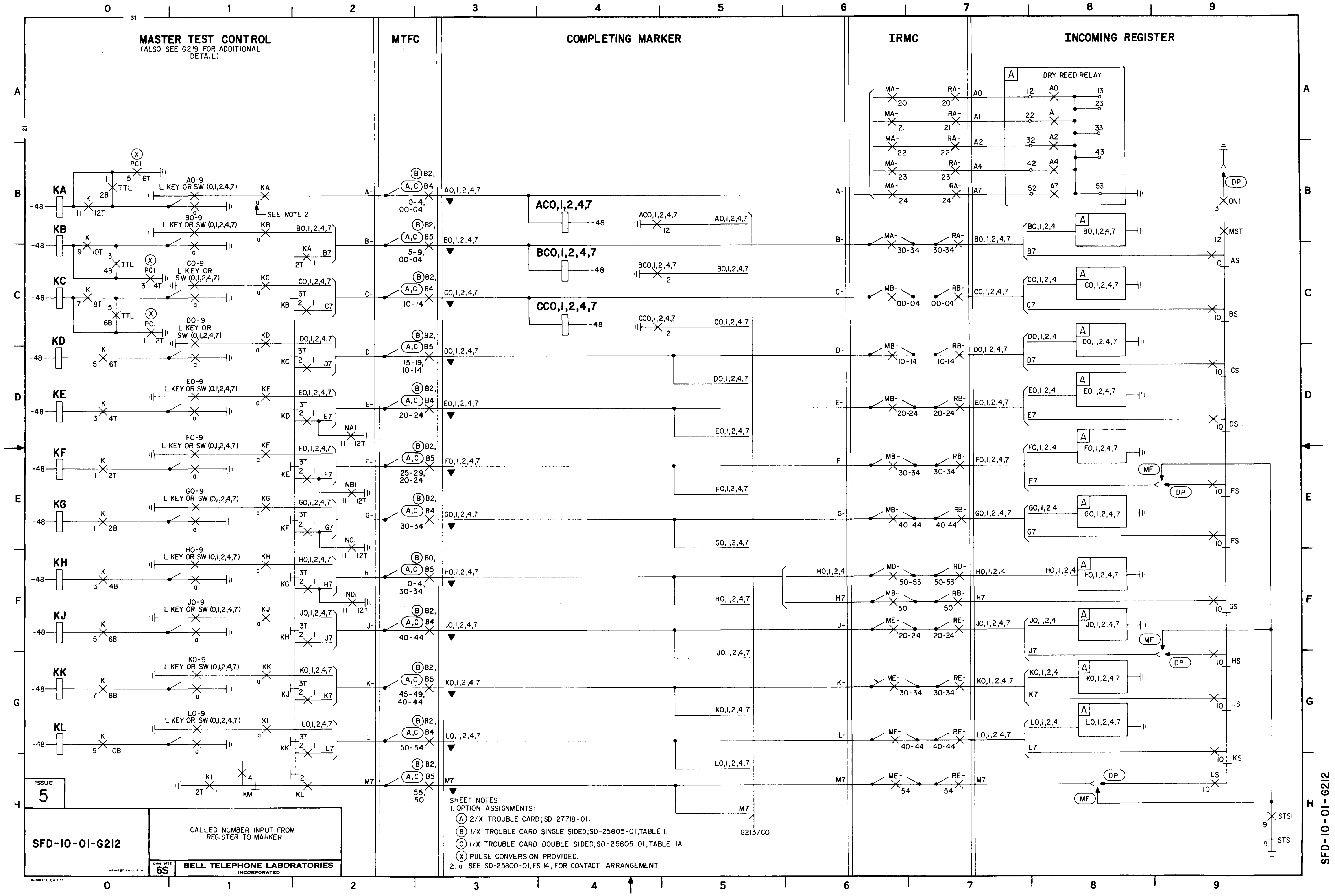
3. CROSS CONNECT PER OFFICE RECORDS.

TRUNK LINK FRAME NUMBER
INPUT TO MARKER AND "A" DIGIT
TRANSLATION

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G211

SFD-10-01-G211



SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD; SD-27718-01.
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I.
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA.
Ⓧ PULSE CONVERSION PROVIDED.
2. a - SEE SD-25800-01, FS 14, FOR CONTACT ARRANGEMENT.

ISSUE
5

SFD-10-01-G212

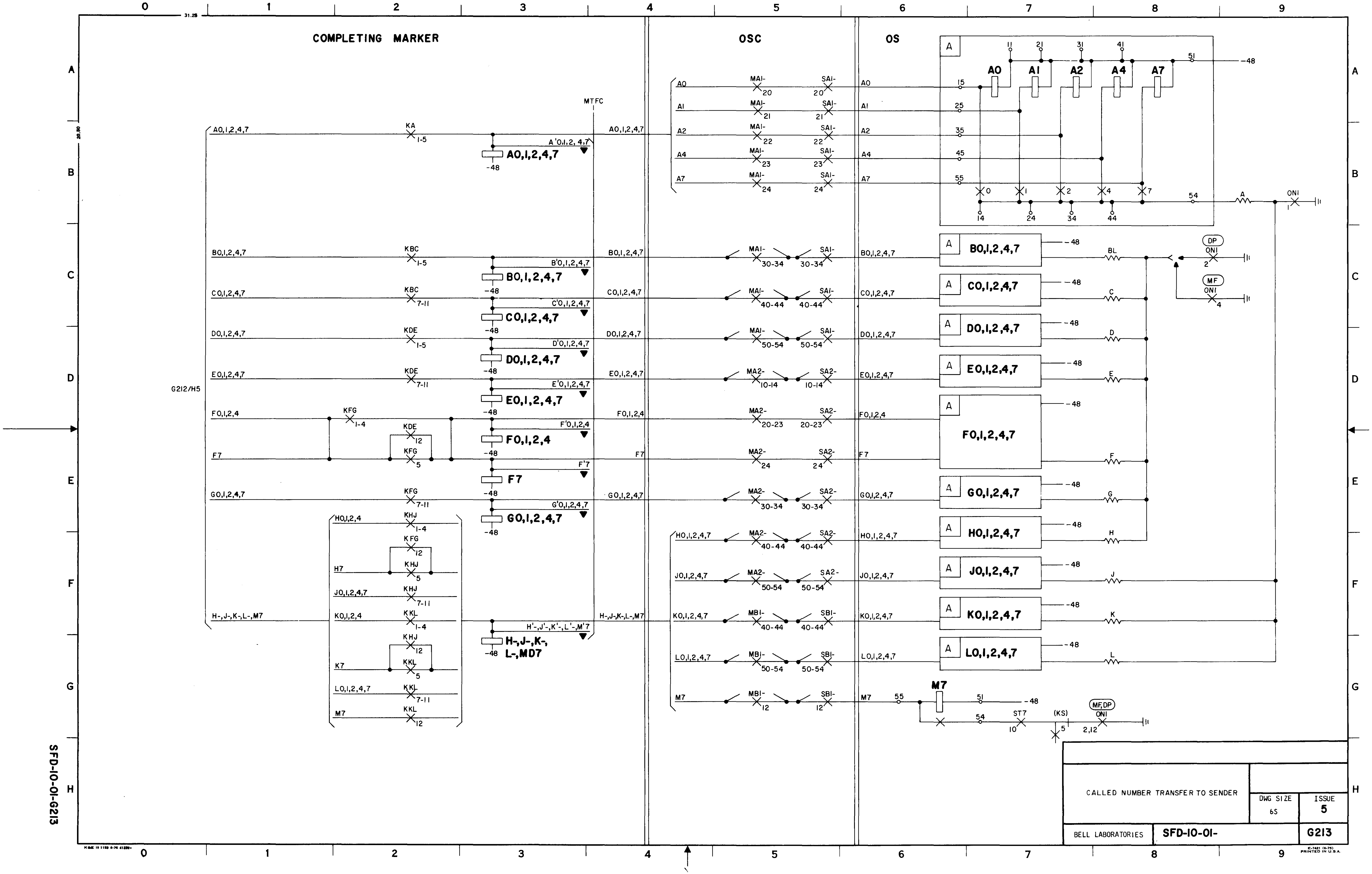
CALLED NUMBER INPUT FROM
REGISTER TO MARKER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

SFD-10-01-G212



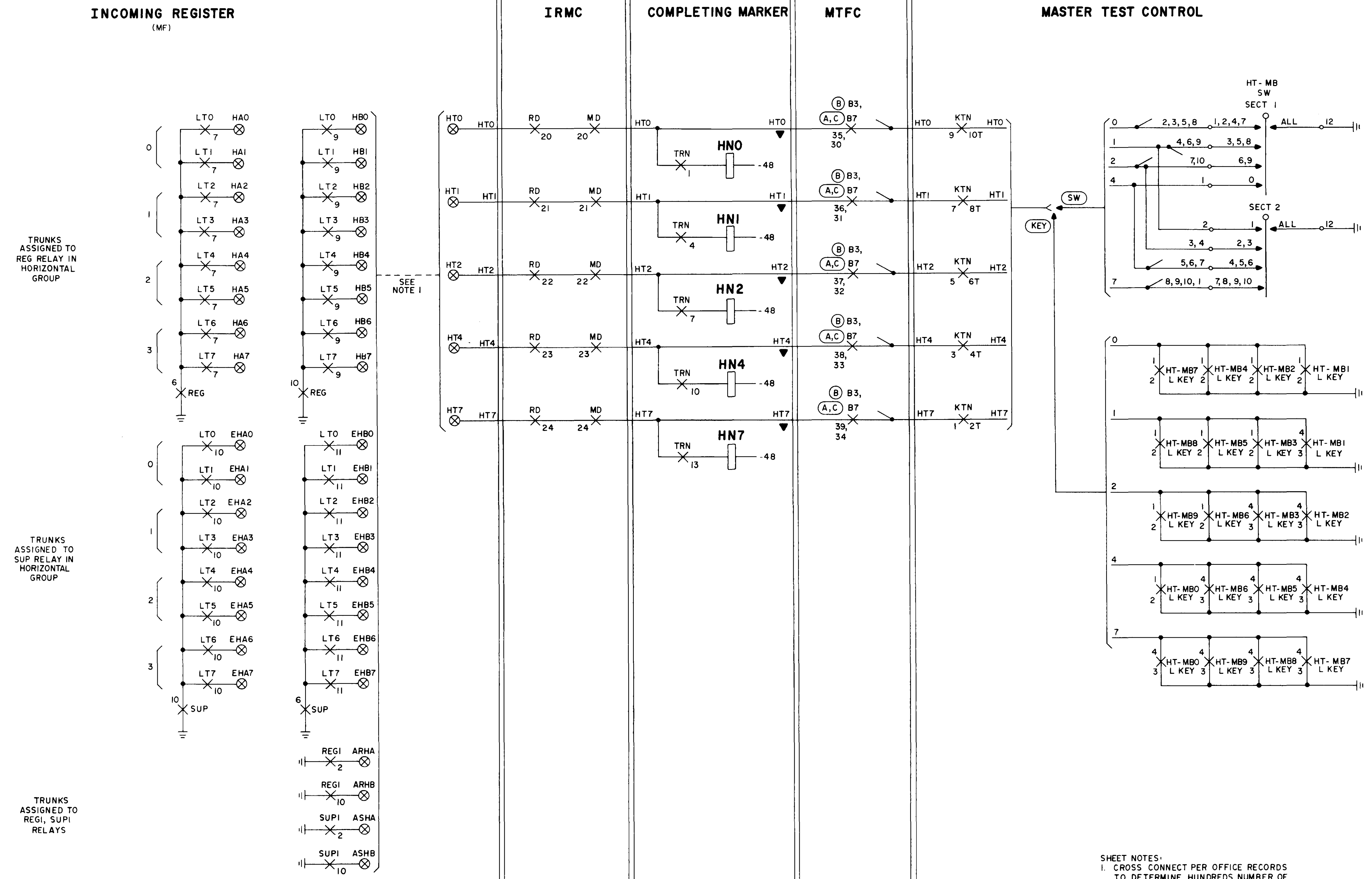
CALLED NUMBER TRANSFER TO SENDER

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES

SFD-10-01-

G213



SHEET NOTES:
1. CROSS CONNECT PER OFFICE RECORDS TO DETERMINE HUNDREDS NUMBER OF TANDEM TRUNK.

2. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED, SD-25805-01, TABLE I
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA

ISSUE
5

SFD-10-01-G214

REGISTRATION OF HUNDREDS NUMBER
IN COMPLETING MARKER
(MF REGISTER)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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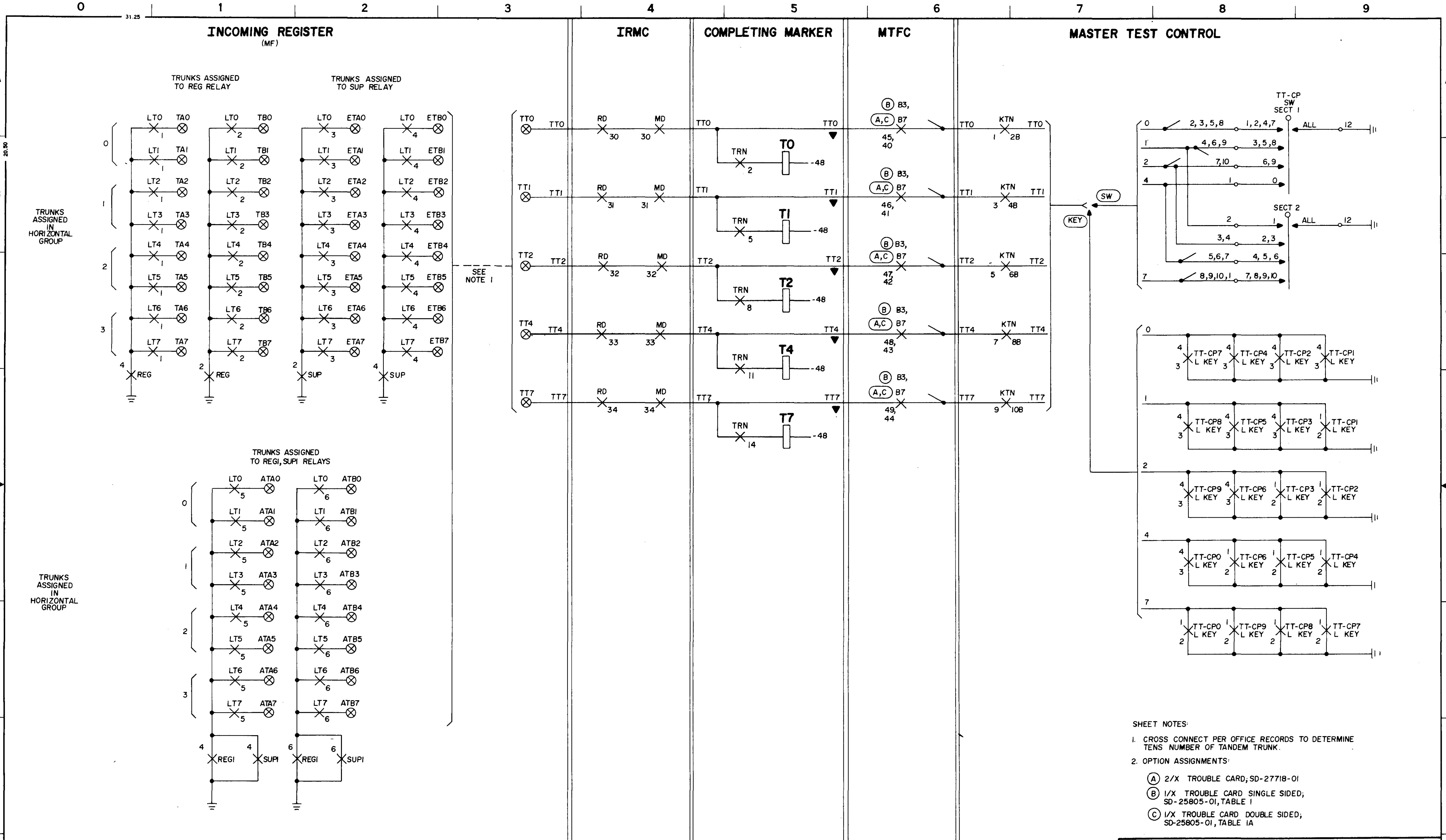
SFD-10-01-G214

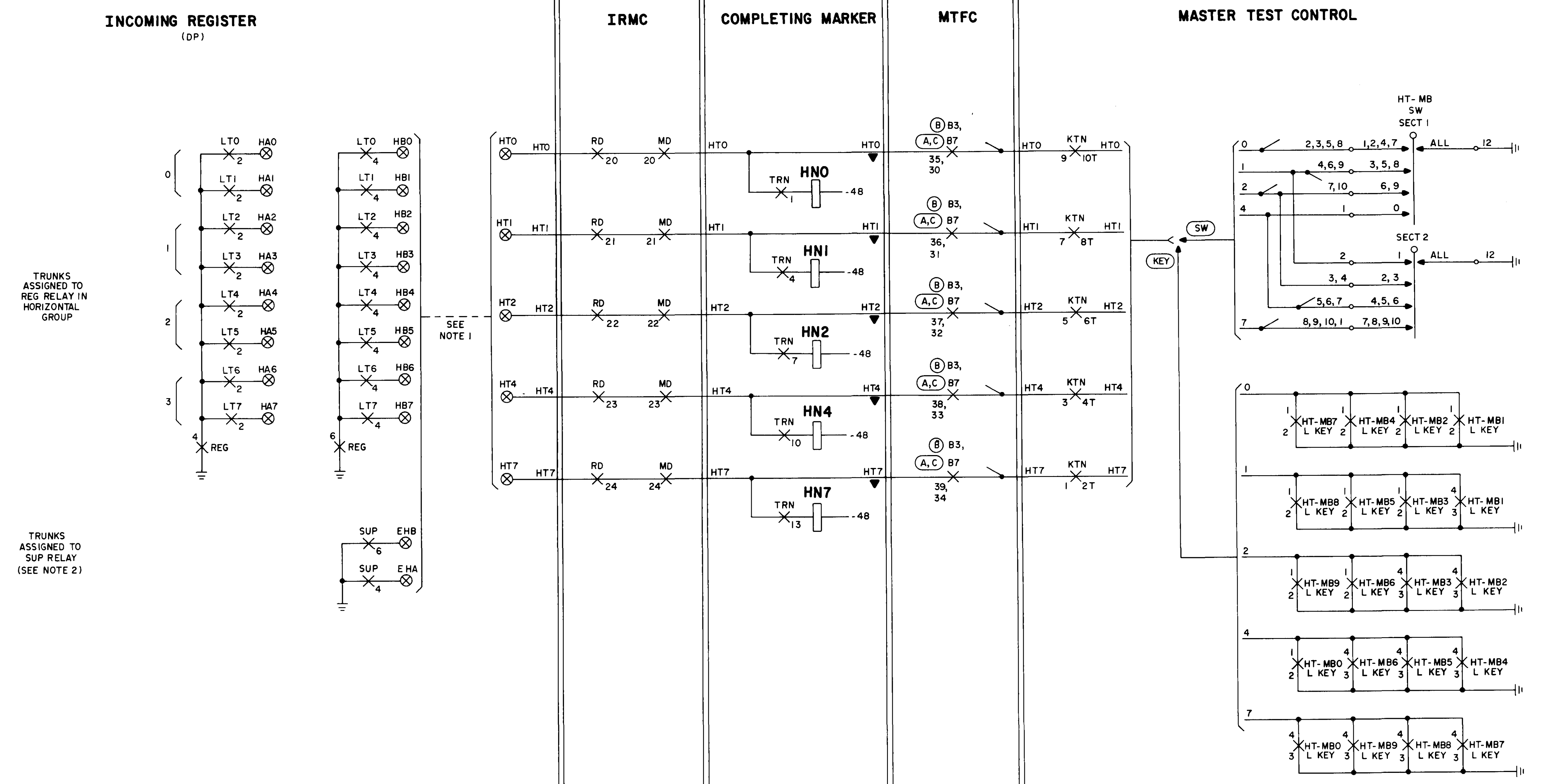

INCOMING REGISTER
(MF)
IRMC
COMPLETING MARKER
MTFC
MASTER TEST CONTROL
TRUNKS ASSIGNED TO REG RELAY
TRUNKS ASSIGNED TO SUP RELAY
TRUNKS ASSIGNED IN HORIZONTAL GROUP
TRUNKS ASSIGNED TO REGI, SUPI RELAYS
LT0 LT1 LT2 LT3 LT4 LT5 LT6 LT7
TA0 TA1 TA2 TA3 TA4 TA5 TA6 TA7
TB0 TB1 TB2 TB3 TB4 TB5 TB6 TB7
ETA0 ETA1 ETA2 ETA3 ETA4 ETA5 ETA6 ETA7
ETB0 ETB1 ETB2 ETB3 ETB4 ETB5 ETB6 ETB7
ATA0 ATA1 ATA2 ATA3 ATA4 ATA5 ATA6 ATA7
ATB0 ATB1 ATB2 ATB3 ATB4 ATB5 ATB6 ATB7
REG
SUP
REGI
SUPI
SEE NOTE 1
TT0 TT1 TT2 TT4 TT7
RD
MD
TRN
T0 T1 T2 T4 T7
-48
B B3,
A,C B7
KTN
TT-CP SW SECT 1
SECT 2
ALL
SW
KEY
TT-CP0 L KEY
TT-CP1 L KEY
TT-CP2 L KEY
TT-CP3 L KEY
TT-CP4 L KEY
TT-CP5 L KEY
TT-CP6 L KEY
TT-CP7 L KEY
TT-CP8 L KEY
TT-CP9 L KEY

SHEET NOTES:

1. CROSS CONNECT PER OFFICE RECORDS TO DETERMINE TENS NUMBER OF TANDEM TRUNK.
2. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA

REGISTRATION OF TENS NUMBER IN COMPLETING MARKER (MF INC REGISTER)	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G215

SFD-10-01-G215



SHEET NOTES:

1. CROSS CONNECT PER OFFICE RECORDS TO DETERMINE HUNDREDS NUMBER OF TANDEM TRUNKS.

2. ONLY ONE HUNDREDS NUMBER CAN BE ASSIGNED TO TRUNKS ASSIGNED TO SUP RELAYS.

3. OPTION ASSIGNMENMENTS:

   Ⓐ 2/X TROUBLE CARD; SD-27718-01

   Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1

   Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

ISSUE
5

SFD-10-01-G216

REGISTRATION OF HUNDREDS NUMBER
IN COMPLETING MARKER
(DP REGISTER)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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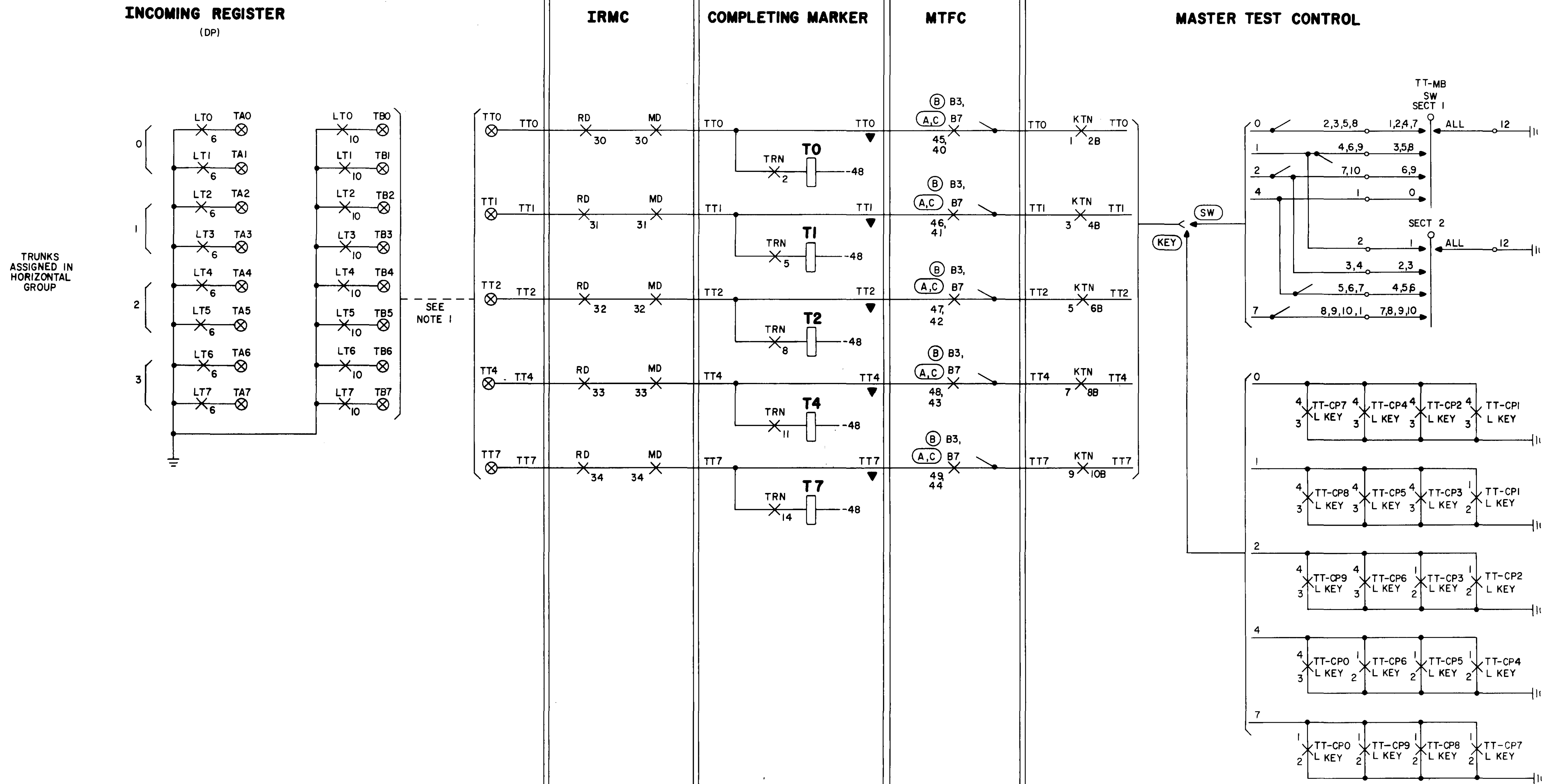


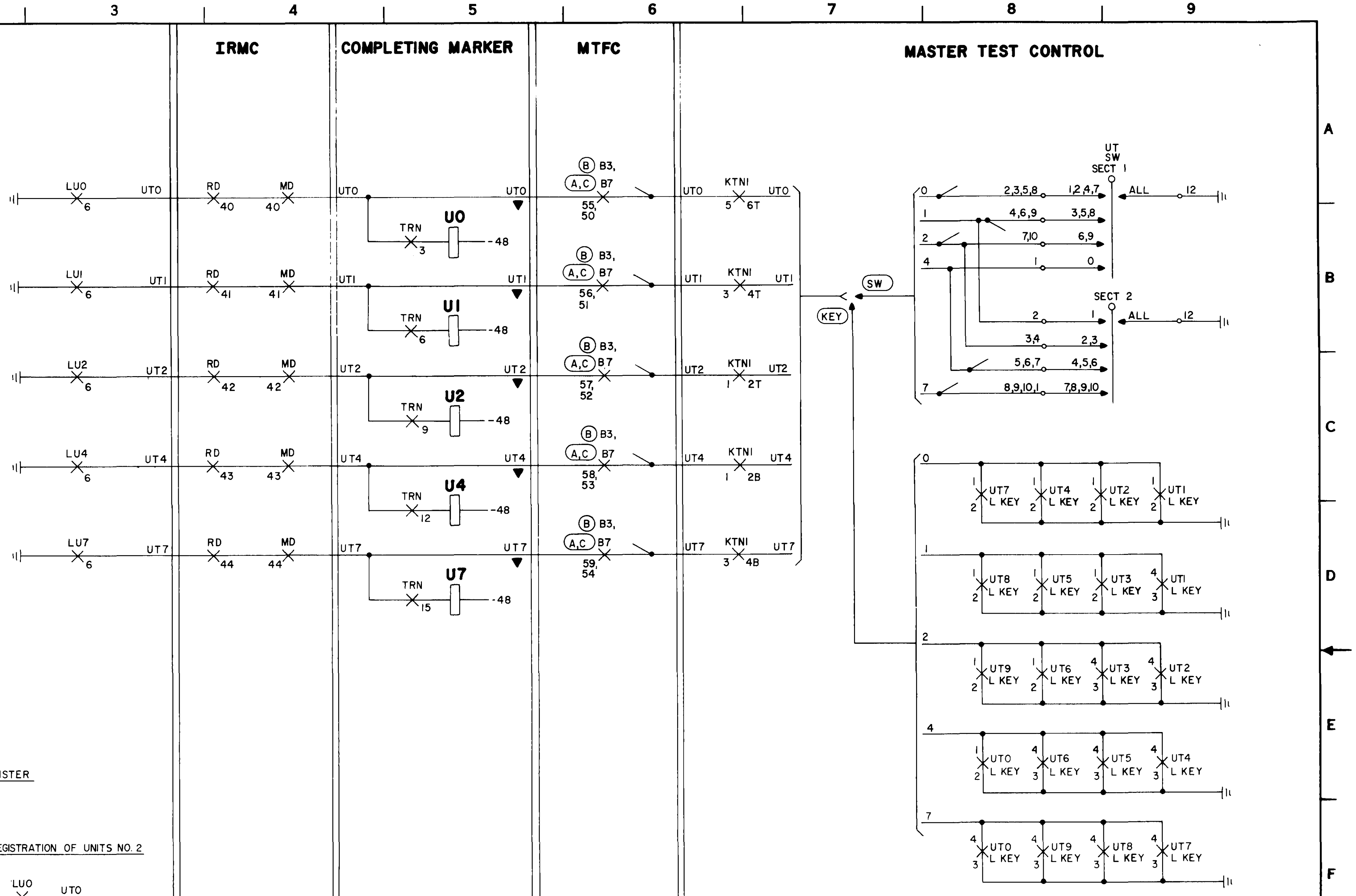
SHEET NOTES:
1. CROSS CONNECT PER OFFICE RECORDS TO DETERMINE TENS NUMBER OF TANDEM TRUNK.
2. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD; SD-2778-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA

REGISTRATION OF TENS NUMBER
IN COMPLETING MARKER
(DP REGISTER)

DWG SIZE	ISSUE
6S	5

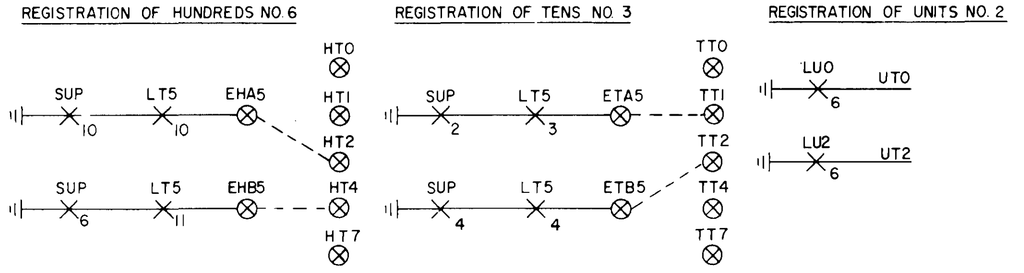
BELL LABORATORIES SFD-10-01- G217

SFD-10-01-G217



TYPICAL CROSS CONNECTION FOR REGISTRATION OF TRUNK NUMBER IN MF INCOMING REGISTER

TRUNK NUMBER 632 ASSIGNED TO SUP RELAY, HORIZONTAL GROUP 2,
VERTICAL 15 (RIGHT HALF)


REGISTRATION OF HUNDREDS NO. 6 REGISTRATION OF TENS NO. 3 REGISTRATION OF UNITS NO. 2

SHEET NOTES
1. OPTION ASSIGNMENMENTS
Ⓐ 2/X TROUBLE CARD, SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED, SD-25805-01, TABLE 1
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED, SD-25805-01, TABLE 1A

ISSUE
5

SFD-10-01-G218

REGISTRATION OF UNITS DIGIT
IN COMPLETING MARKER

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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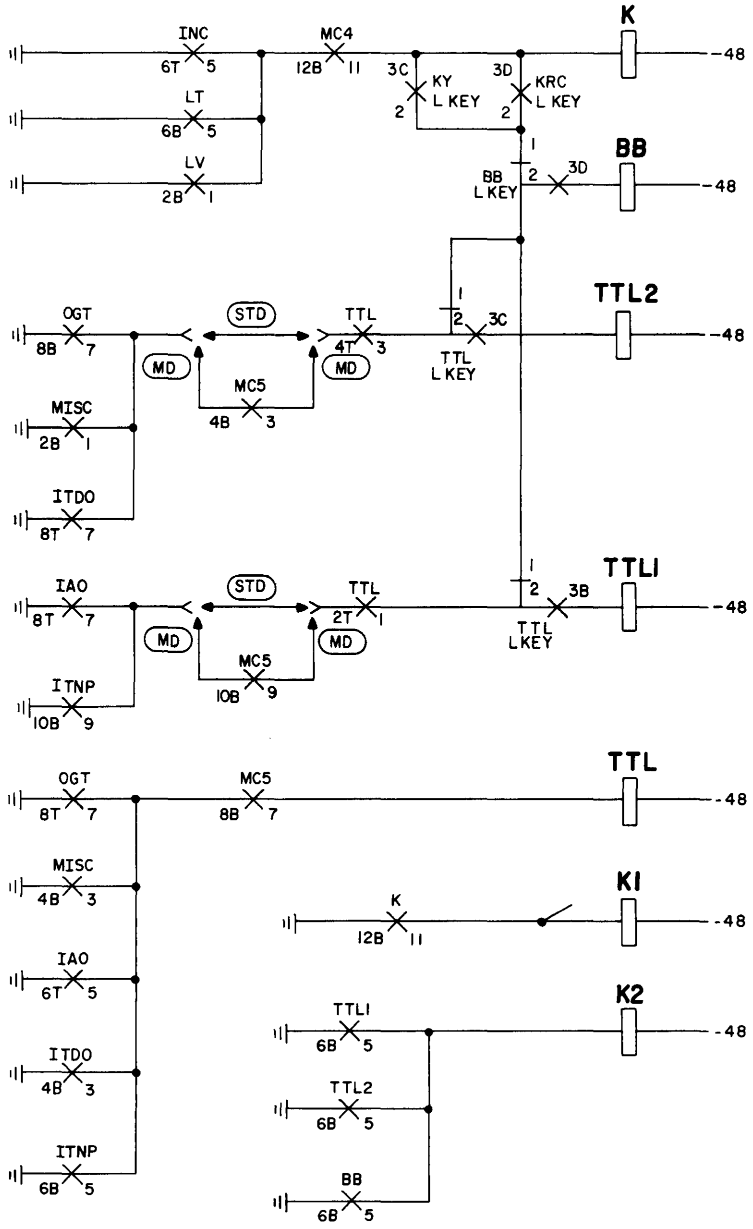
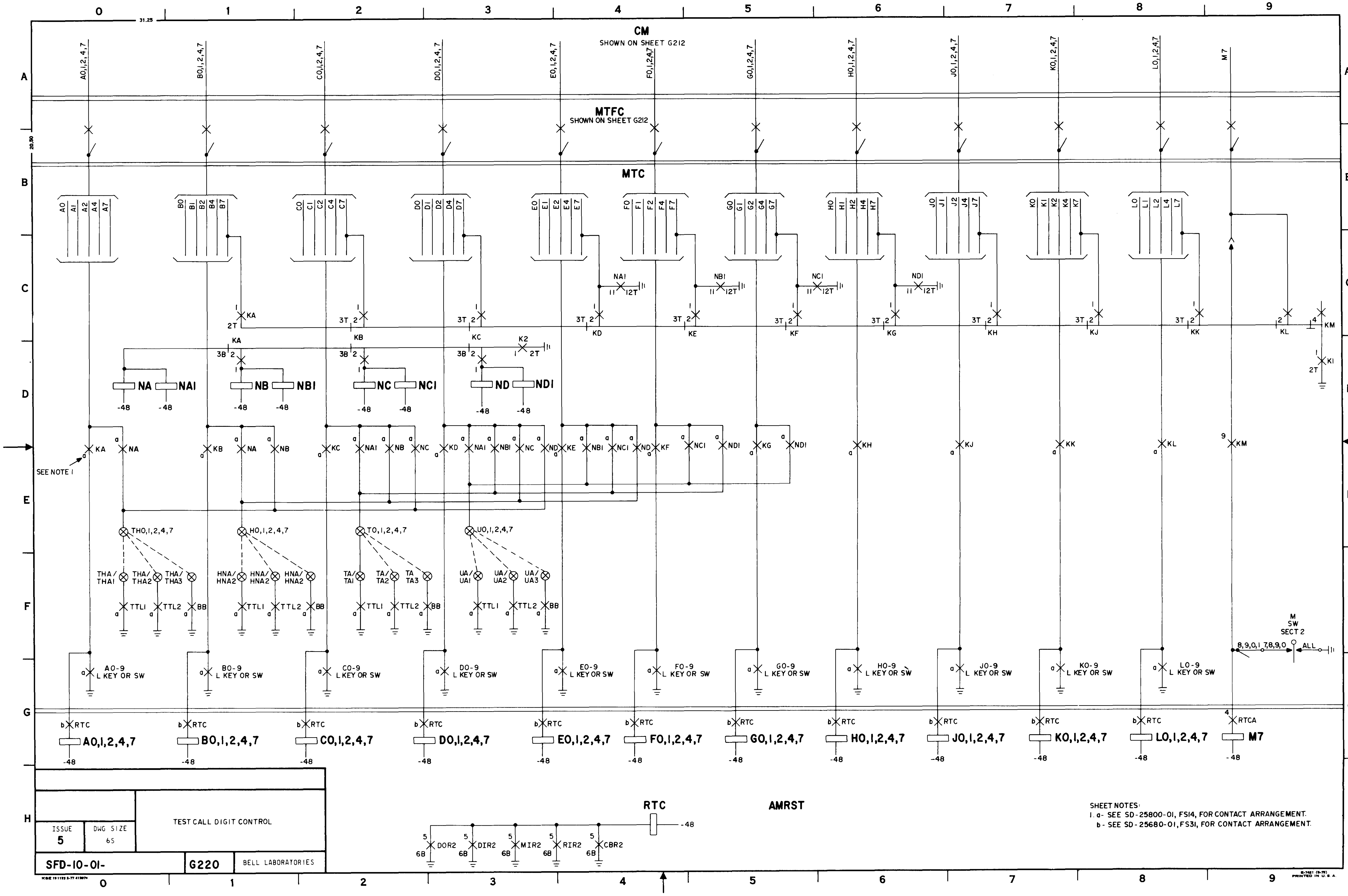
SFD-10-01-G218

MTC



TEST CALL DIGIT CONTROL	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G219

SFD-10-01-G219



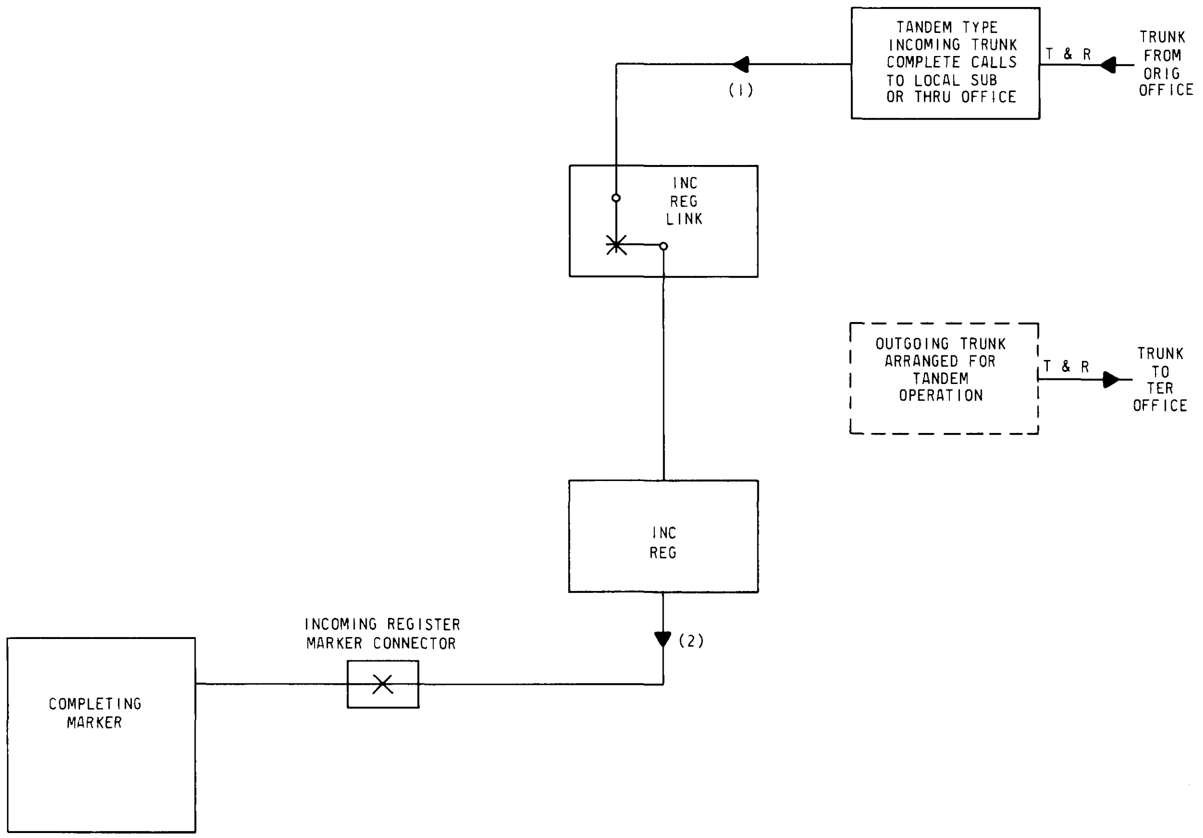
SHEET NOTES:
1. a- SEE SD-25800-01, FS14, FOR CONTACT ARRANGEMENT.
b- SEE SD-25680-01, FS31, FOR CONTACT ARRANGEMENT.

ISSUE	DWG SIZE	TEST CALL DIGIT CONTROL
5	65	

SFD-10-01- G220 BELL LABORATORIES

SFD-10-01-G220

ESTABLISHING TANDEM SWITCHING CONNECTION


TANDEM TYPE INCOMING TRUNK COMPLETE CALLS TO LOCAL SUB OR THRU OFFICE
T & R
TRUNK FROM ORIG OFFICE
(1)
INC REG LINK
OUTGOING TRUNK ARRANGED FOR TANDEM OPERATION
T & R
TRUNK TO TER OFFICE
INC REG
(2)
INCOMING REGISTER MARKER CONNECTOR
COMPLETING MARKER

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G301	PART G3 - SELECTION OF A SENDER
C202	SEQUENCE CHART - SENDER SELECTION AND TIMING
C203	SEQUENCE CHART - OUTSENDER TIMING (OST)
C204	IDLE SENDER TEST
C205	SENDER SUBGROUP SELECTION
C206	SENDER CONTROL
C207	SENDER CONTROL
C208	CALLED NUMBER TRANSFER TO SENDER - TRANSLATION FOR NUMBER GROUP SELECTION
C209	CALLED NUMBER DIGIT CHECK
C210	MARKER INPUTS TO SENDER
C211	MARKER INPUTS TO SENDER
C212	MARKER INPUTS TO SENDER
C213	OUTGOING SENDER CONTROL LEAD INTERCONNECTIONS
C214	SENDER REGISTRATION TIMING
C215	TRUNK GUARD TEST
C216	AMA RECORDER NUMBER

SHEET NOTES:

1. ON A TANDEM CALL THE SELECTION OF A SENDER IS ALMOST IDENTICAL TO THE SELECTION OF A SENDER ON A REGULAR OUTGOING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION!

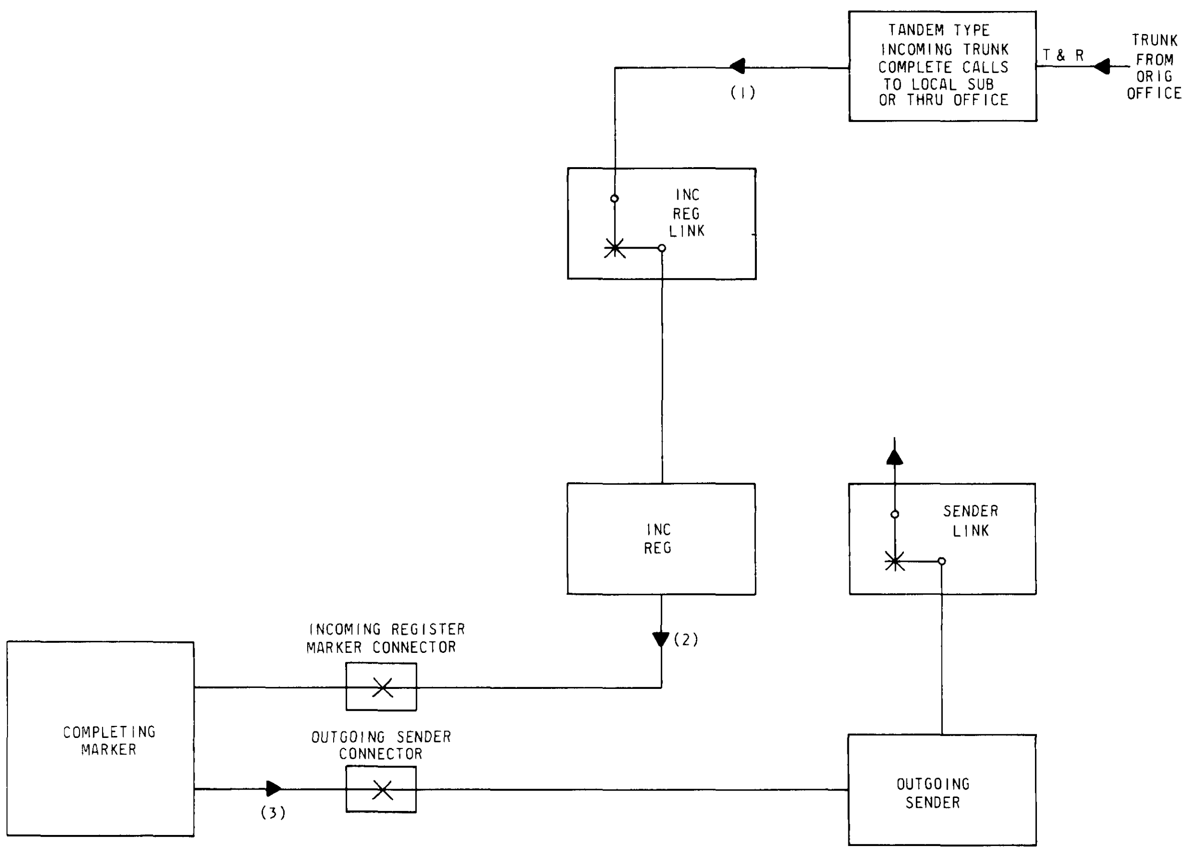
DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G3
SELECTION OF A SENDER

		DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-		G301

SFD-10-01-G301
2 SHEETS, SHEET 1

ESTABLISHING TANDEM SWITCHING CONNECTION


TANDEM TYPE INCOMING TRUNK COMPLETE CALLS TO LOCAL SUB OR THRU OFFICE
T & R
TRUNK FROM ORIG OFFICE
(1)
INC REG LINK
INC REG
(2)
SENDER LINK
INCOMING REGISTER MARKER CONNECTOR
COMPLETING MARKER
OUTGOING SENDER CONNECTOR
(3)
OUTGOING SENDER

INDEX

PAGE NO.	TITLE
G401	PART G4 - CONNECTION TO TRUNK LINK FRAME AND TRUNK
C302	SEQUENCE CHART - TRUNK LINK FRAME SELECTION AND TRUNK SELECTION
C303	IDLE TRUNK TEST
C304	TRUNK LINK FRAME SELECTION
C305	TRUNK LINK FRAME SEIZURE
C306	TRUNK LINK FRAME MEMORY
C307	TRUNK SEIZURE
C308	TRUNK SEIZURE
C309	SENDER NO DIGIT AND TRUNK TT RELAY CONTROL
C310	OPERATION OF CONTROL RELAYS IN TRUNK LINK FRAME
C311	TRUNK CLASS CONTROL
C312	TRUNK CHARGING
C313	TRUNK SELECTION TIMING

SHEET NOTES:

1. ON A TANDEM CALL THE CONNECTION TO A TRUNK LINK AND A TRUNK IS ALMOST IDENTICAL TO THE CONNECTION TO A TRUNK LINK AND TRUNK ON A REGULAR OUTGOING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G4
CONNECTION TO TRUNK LINK
FRAME AND TRUNK

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES | SFD-10-01- | G401

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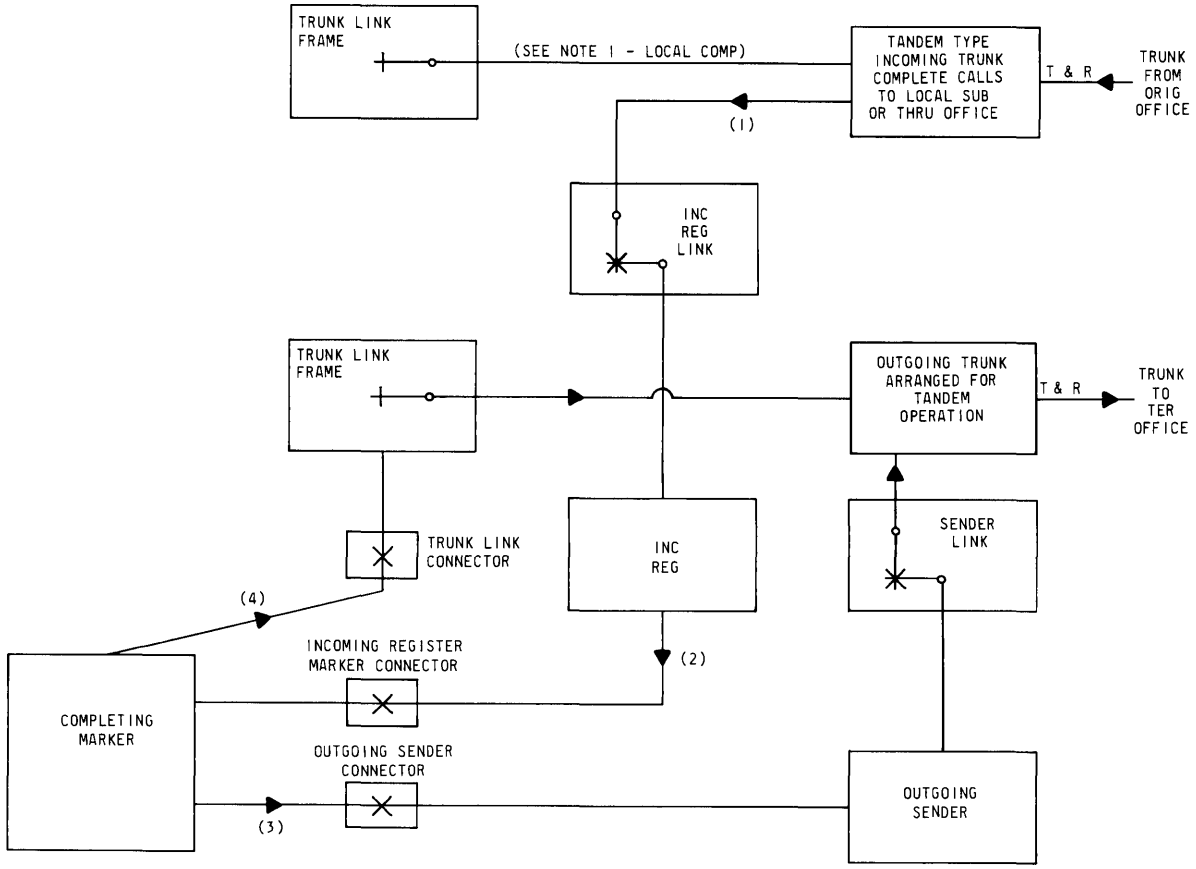
SFD-10-01-G401
2 SHEETS, SHEET 1

ESTABLISHING TANDEM SWITCHING CONNECTION


TRUNK LINK FRAME
(SEE NOTE 1 - LOCAL COMP)
TANDEM TYPE INCOMING TRUNK COMPLETE CALLS TO LOCAL SUB OR THRU OFFICE
T & R
TRUNK FROM ORIG OFFICE
(1)
INC REG LINK
TRUNK LINK FRAME
OUTGOING TRUNK ARRANGED FOR TANDEM OPERATION
T & R
TRUNK TO TER OFFICE
TRUNK LINK CONNECTOR
INC REG
SENDER LINK
(4)
INCOMING REGISTER MARKER CONNECTOR
(2)
COMPLETING MARKER
OUTGOING SENDER CONNECTOR
(3)
OUTGOING SENDER

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G502	SEQUENCE CHART - NUMBER GROUP SEIZURE AND CALLED NUMBER TRANSLATION
G503	SEQUENCE CHART - INTERCEPT TREATMENT
G504	NUMBER GROUP START AND OFF-NORMAL CONTROL
G505	NUMBER GROUP SEIZURE
G506	HUNDREDS AND TENS DIGIT REGISTRATION AND TENS BLOCK SCREENING SELECTION
G507	UNITS DIGIT REGISTRATION IN NUMBER GROUP
G508	PHYSICAL, THEORETICAL AND NUMBER GROUP CHECK
G509	NUMBER GROUP TRANSLATION OF TRUNK NUMBER TO LINE LOCATION AND TRUNK NUMBER CHECK
G510	LINE LOCATION CONTROL
G511	NUMBER GROUP RELEASE CONTROL
G512	BLANK NUMBER, INTERCEPT VACANT CODE AND RE-ORDER

SHEET NOTES:

1. NUMBER GROUP CKT TRANSLATES DIRECTORY NUMBER INTO CALLED SUB. LINE LOCATION FOR LOCAL COMPLETING AND ALSO TRUNK NUMBER INTO LINE LOCATION FOR CALLS THRU MARKER GROUP.

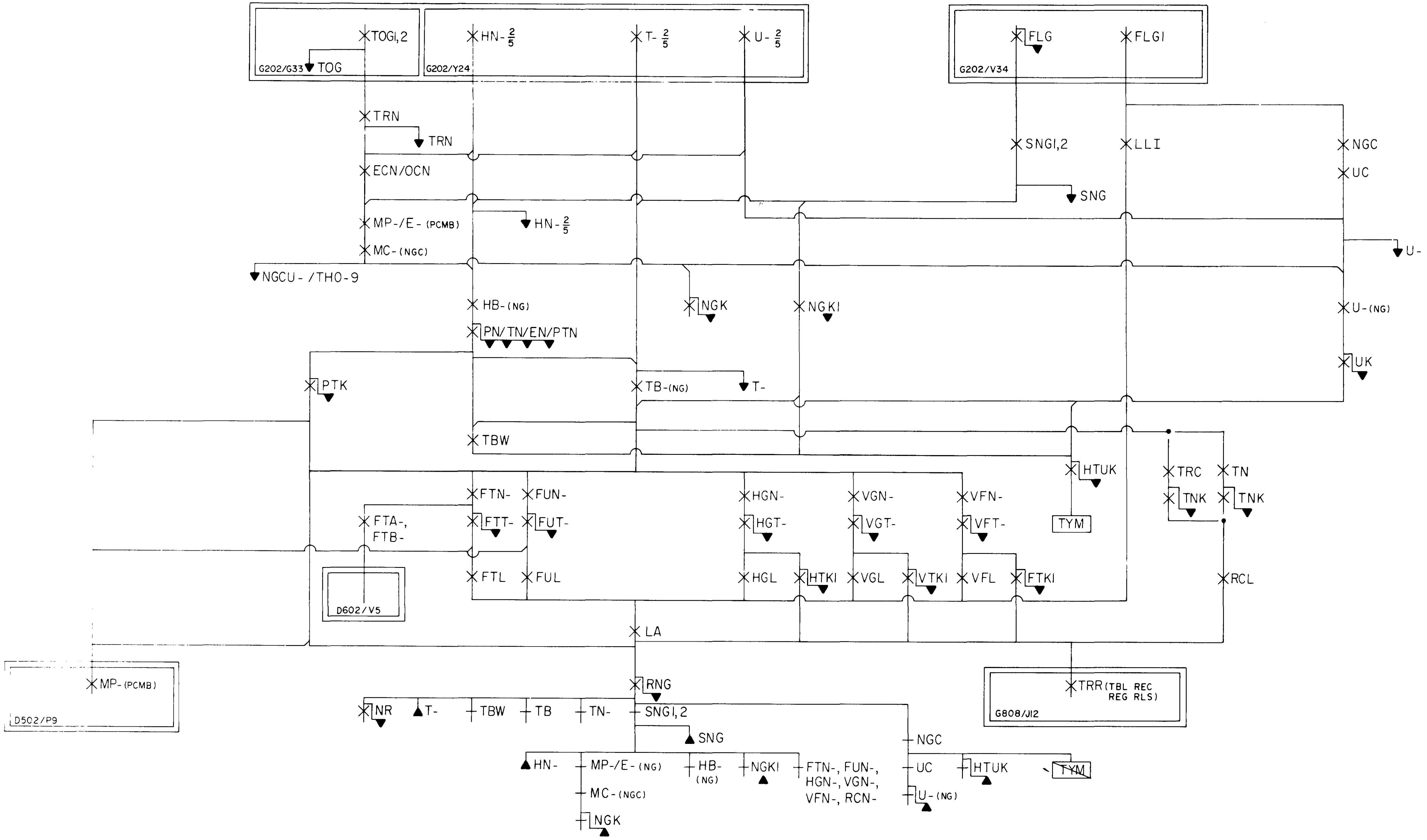
CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

SFD-10-01-G501
2 SHEETS, SHEET 1

PART G5
CONNECTION TO NUMBER GROUP

DWG SIZE	ISSUE	
6S	5	
BELL LABORATORIES	SFD-10-01-	G501



SEQUENCE CHART
NUMBER GROUP SEIZURE
AND CALLED NUMBER TRANSLATION

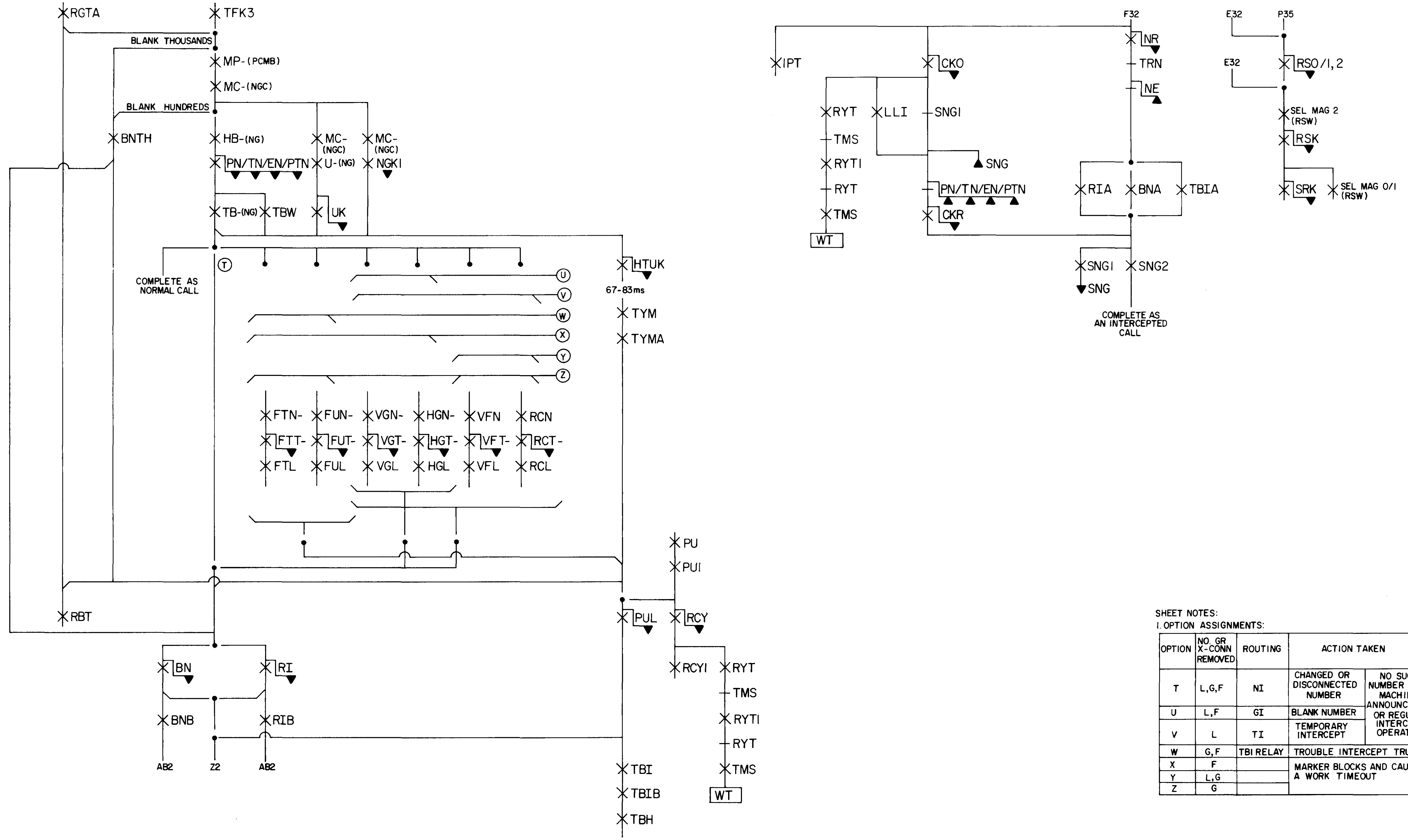
5

SFD-10-01-

G502

BELL LABORATORIES

SFD-10-01- G502



SHEET NOTES:

1. OPTION ASSIGNMENTS:

OPTION	NO. GR X-CONN REMOVED	ROUTING	ACTION TAKEN	
T	L,G,F	NI	CHANGED OR DISCONNECTED NUMBER	NO SUCH NUMBER TONE, MACHINE ANNOUNCEMENT OR REGULAR INTERCEPT OPERATOR
U	L,F	GI	BLANK NUMBER	
V	L	TI	TEMPORARY INTERCEPT	
W	G,F	TBI RELAY	TROUBLE INTERCEPT TRUNK	
X	F		MARKER BLOCKS AND CAUSES A WORK TIMEOUT	
Y	L,G			
Z	G			

SEQUENCE CHART
INTERCEPT TREATMENT

DWG SIZE 6S

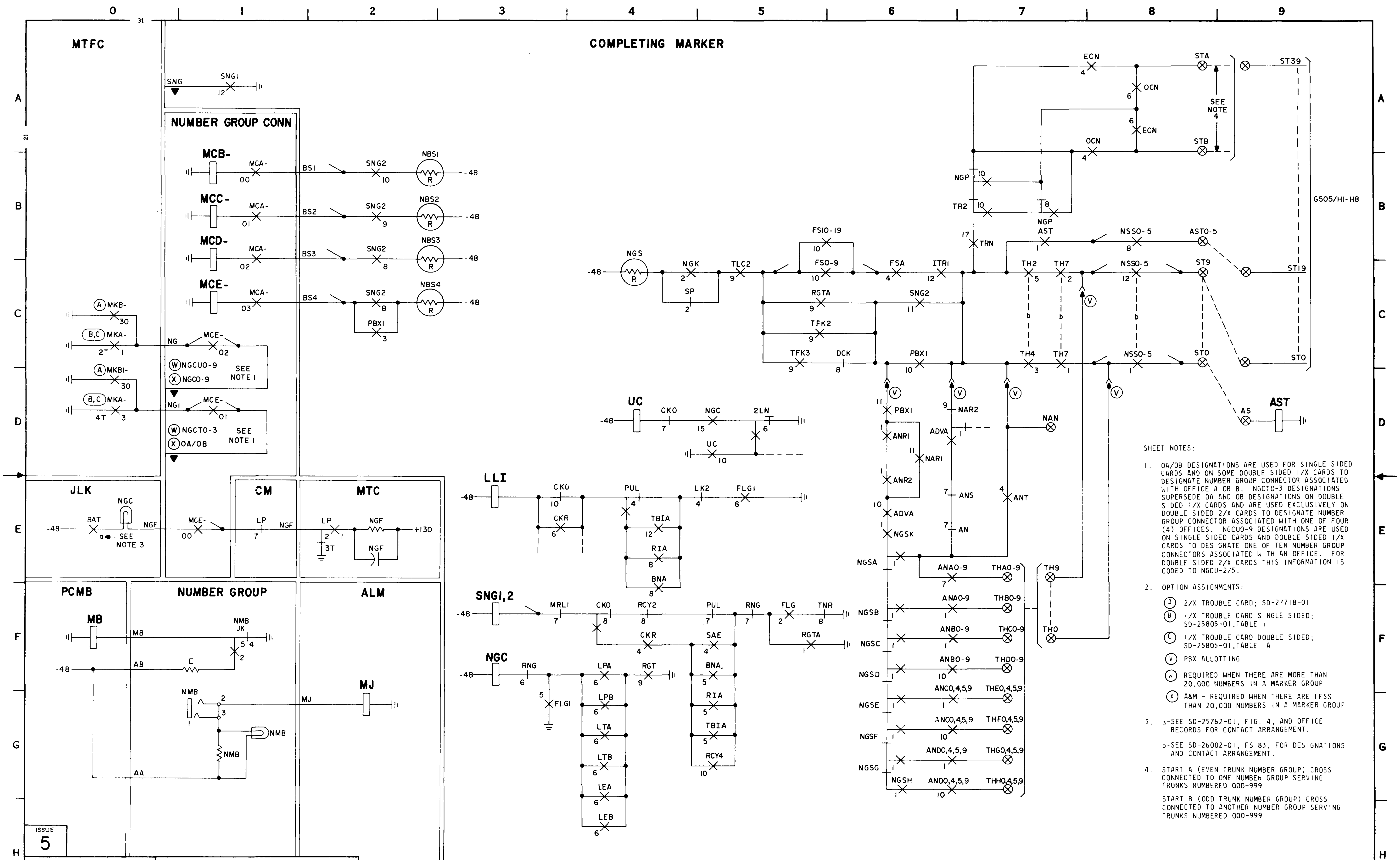
ISSUE 5

BELL LABORATORIES

SFD-10-01-G503

SFD-10-01-G503

E-7421-B (6-75) PRINTED IN U.S.A.



SHEET NOTES:

1. 0A/0B DESIGNATIONS ARE USED FOR SINGLE SIDED CARDS AND ON SOME DOUBLE SIDED 1/X CARDS TO DESIGNATE NUMBER GROUP CONNECTOR ASSOCIATED WITH OFFICE A OR B. NGCT0-3 DESIGNATIONS SUPERSEDE 0A AND 0B DESIGNATIONS ON DOUBLE SIDED 1/X CARDS AND ARE USED EXCLUSIVELY ON DOUBLE SIDED 2/X CARDS TO DESIGNATE NUMBER GROUP CONNECTOR ASSOCIATED WITH ONE OF FOUR (4) OFFICES. NGCU0-9 DESIGNATIONS ARE USED ON SINGLE SIDED CARDS AND DOUBLE SIDED 1/X CARDS TO DESIGNATE ONE OF TEN NUMBER GROUP CONNECTORS ASSOCIATED WITH AN OFFICE. FOR DOUBLE SIDED 2/X CARDS THIS INFORMATION IS CODED TO NGCU-2/5.

2. OPTION ASSIGNMENTS:

   Ⓐ 2/X TROUBLE CARD; SD-27718-01

   Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I

   Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA

   Ⓥ PBX ALLOTTING

   Ⓦ REQUIRED WHEN THERE ARE MORE THAN 20,000 NUMBERS IN A MARKER GROUP

   Ⓧ A&M - REQUIRED WHEN THERE ARE LESS THAN 20,000 NUMBERS IN A MARKER GROUP

3. a-SEE SD-25762-01, FIG. 4, AND OFFICE RECORDS FOR CONTACT ARRANGEMENT.

   b-SEE SD-26002-01, FS 83, FOR DESIGNATIONS AND CONTACT ARRANGEMENT.

4. START A (EVEN TRUNK NUMBER GROUP) CROSS CONNECTED TO ONE NUMBER GROUP SERVING TRUNKS NUMBERED 000-999

   START B (ODD TRUNK NUMBER GROUP) CROSS CONNECTED TO ANOTHER NUMBER GROUP SERVING TRUNKS NUMBERED 000-999

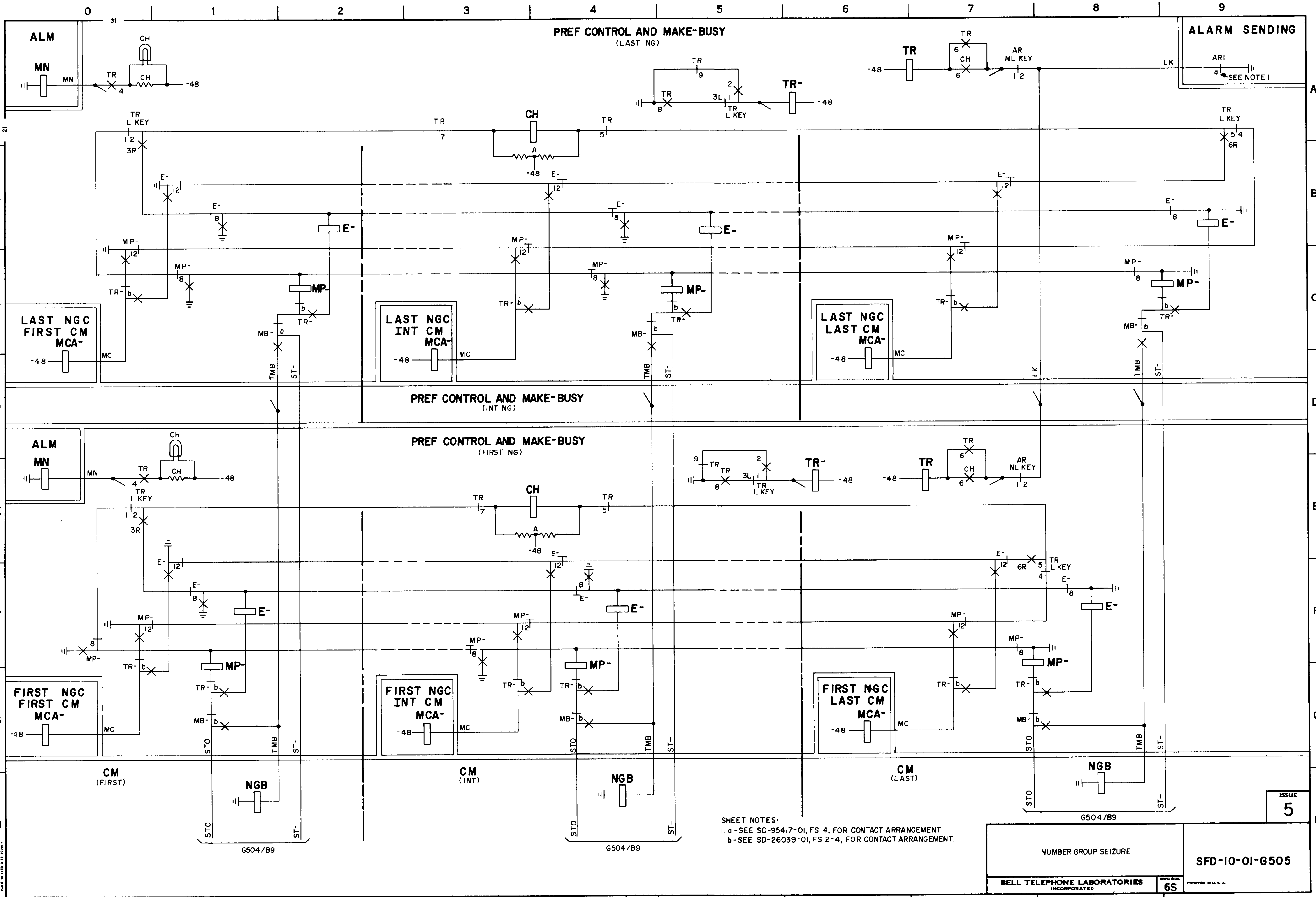
ISSUE
5

SFD-10-01-G504

NUMBER GROUP START AND
OFF-NORMAL CONTROL

6S

BELL TELEPHONE LABORATORIES
INCORPORATED



SHEET NOTES:
1. a-SEE SD-95417-01, FS 4, FOR CONTACT ARRANGEMENT.
b-SEE SD-26039-01, FS 2-4, FOR CONTACT ARRANGEMENT.

ISSUE
5

NUMBER GROUP SEIZURE

SFD-10-01-G505

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

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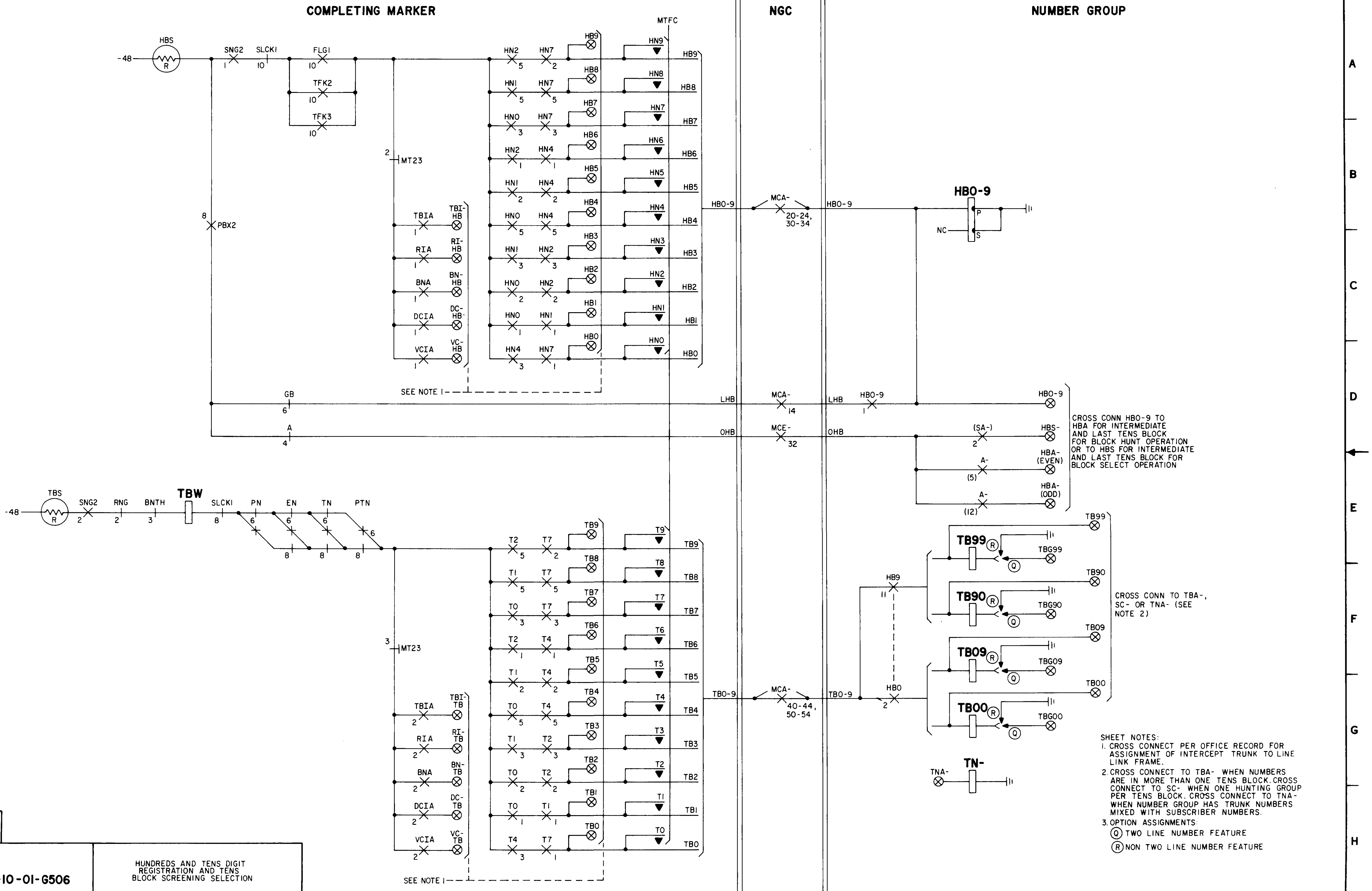
SFD-10-01-G505

E-7431 (10-71)



SEE NOTE 1

CROSS CONN HBO-9 TO HBA FOR INTERMEDIATE AND LAST TENS BLOCK FOR BLOCK HUNT OPERATION OR TO HBS FOR INTERMEDIATE AND LAST TENS BLOCK FOR BLOCK SELECT OPERATION

CROSS CONN TO TBA-, SC- OR TNA- (SEE NOTE 2)

SHEET NOTES:

1. CROSS CONNECT PER OFFICE RECORD FOR ASSIGNMENT OF INTERCEPT TRUNK TO LINE LINK FRAME.
2. CROSS CONNECT TO TBA- WHEN NUMBERS ARE IN MORE THAN ONE TENS BLOCK. CROSS CONNECT TO SC- WHEN ONE HUNTING GROUP PER TENS BLOCK. CROSS CONNECT TO TNA- WHEN NUMBER GROUP HAS TRUNK NUMBERS MIXED WITH SUBSCRIBER NUMBERS.
3. OPTION ASSIGNMENTS:
   Ⓠ TWO LINE NUMBER FEATURE
   Ⓡ NON TWO LINE NUMBER FEATURE

ISSUE
5

SFD-10-01-G506

HUNDREDS AND TENS DIGIT
REGISTRATION AND TENS
BLOCK SCREENING SELECTION

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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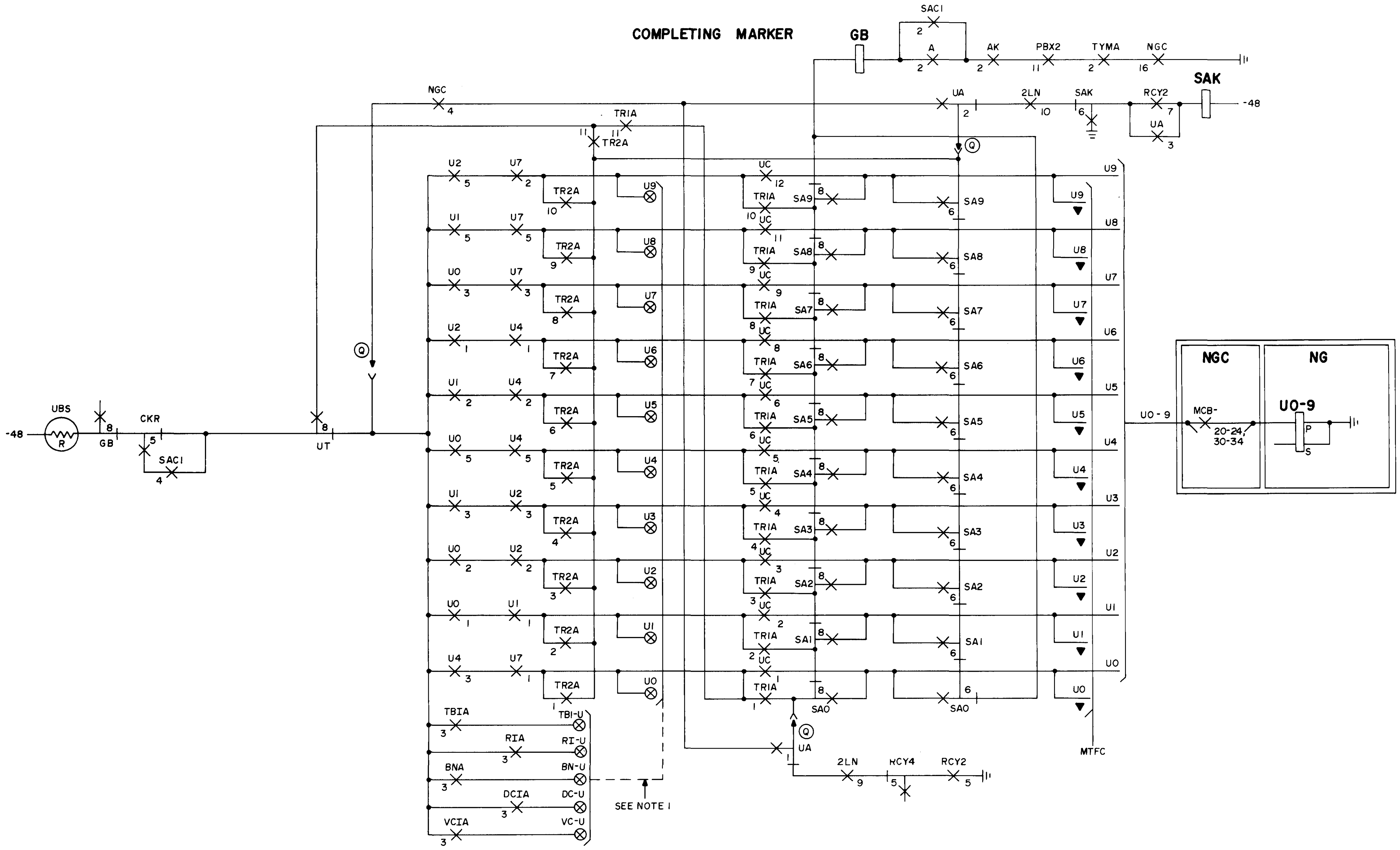
E-7421-L (4-71)

COMPLETING MARKER



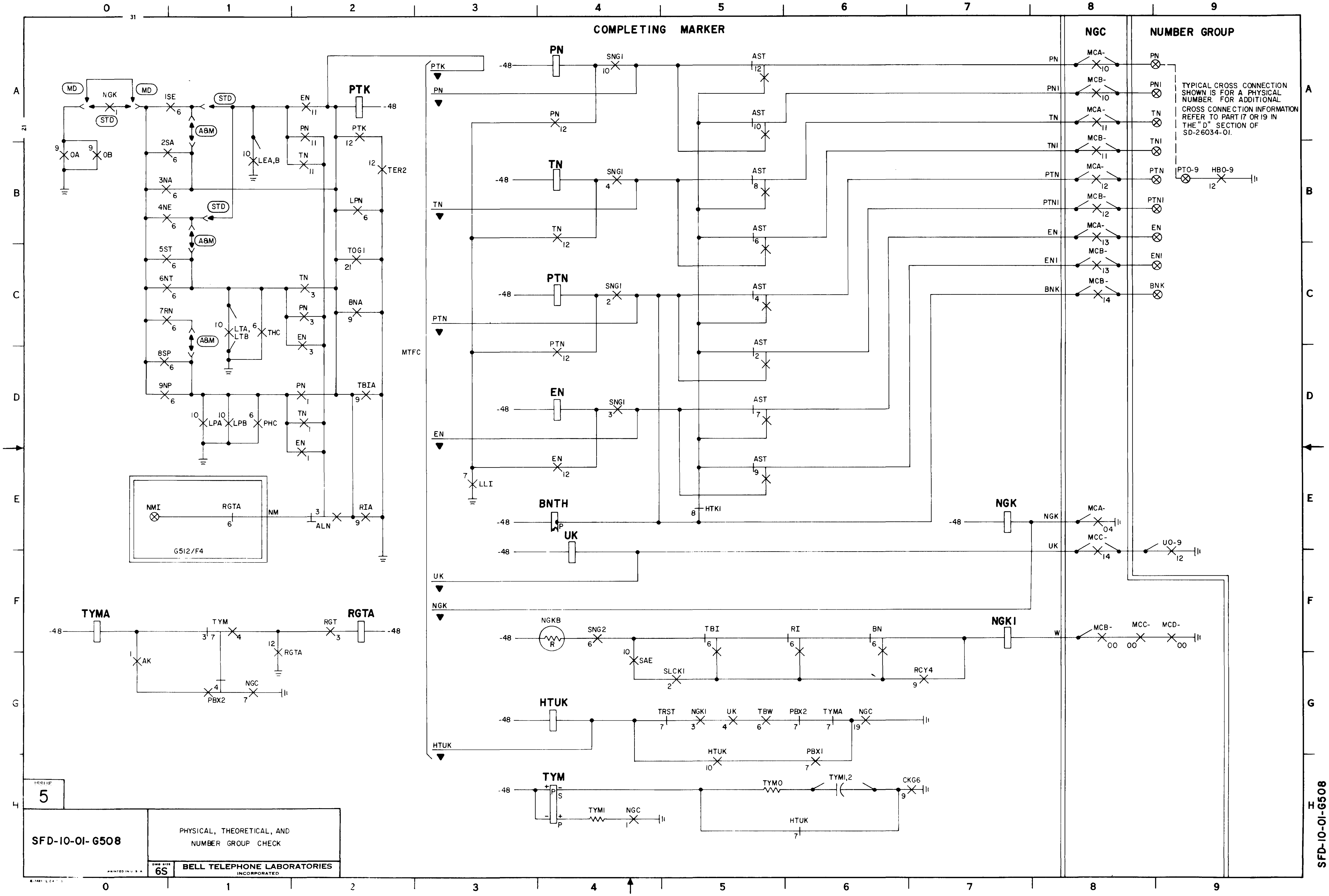
SHEET NOTES:

1. CROSS CONNECT PER OFFICE RECORD FOR ASSIGNMENT OF INTERCEPT TRUNK ON LINE LINK FRAME
2. OPTION ASSIGNMENTS:

Ⓠ TWO LINE NUMBER FEATURE

UNITS DIGIT REGISTRATION IN NUMBER GROUP	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G507

SFD-10-01-G507



TYPICAL CROSS CONNECTION SHOWN IS FOR A PHYSICAL NUMBER. FOR ADDITIONAL CROSS CONNECTION INFORMATION REFER TO PART 17 OR 19 IN THE "D" SECTION OF SD-26034-01.

ISSUE 5

SFD-10-01-G508

PHYSICAL, THEORETICAL, AND NUMBER GROUP CHECK

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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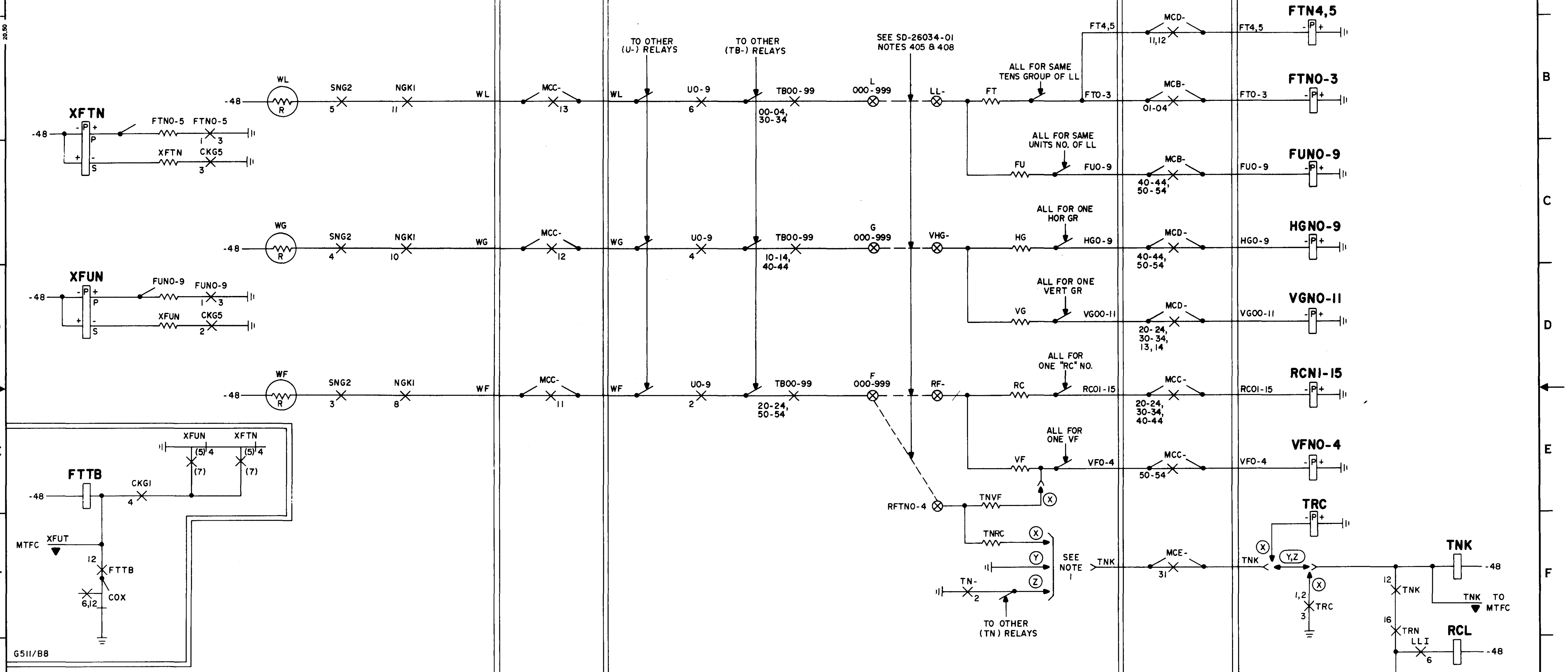
SFD-10-01-G508



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓧ TRUNK NUMBER IDENTIFICATION GIVEN ONLY BY F- TO RFTN- CROSS CONNECTION.

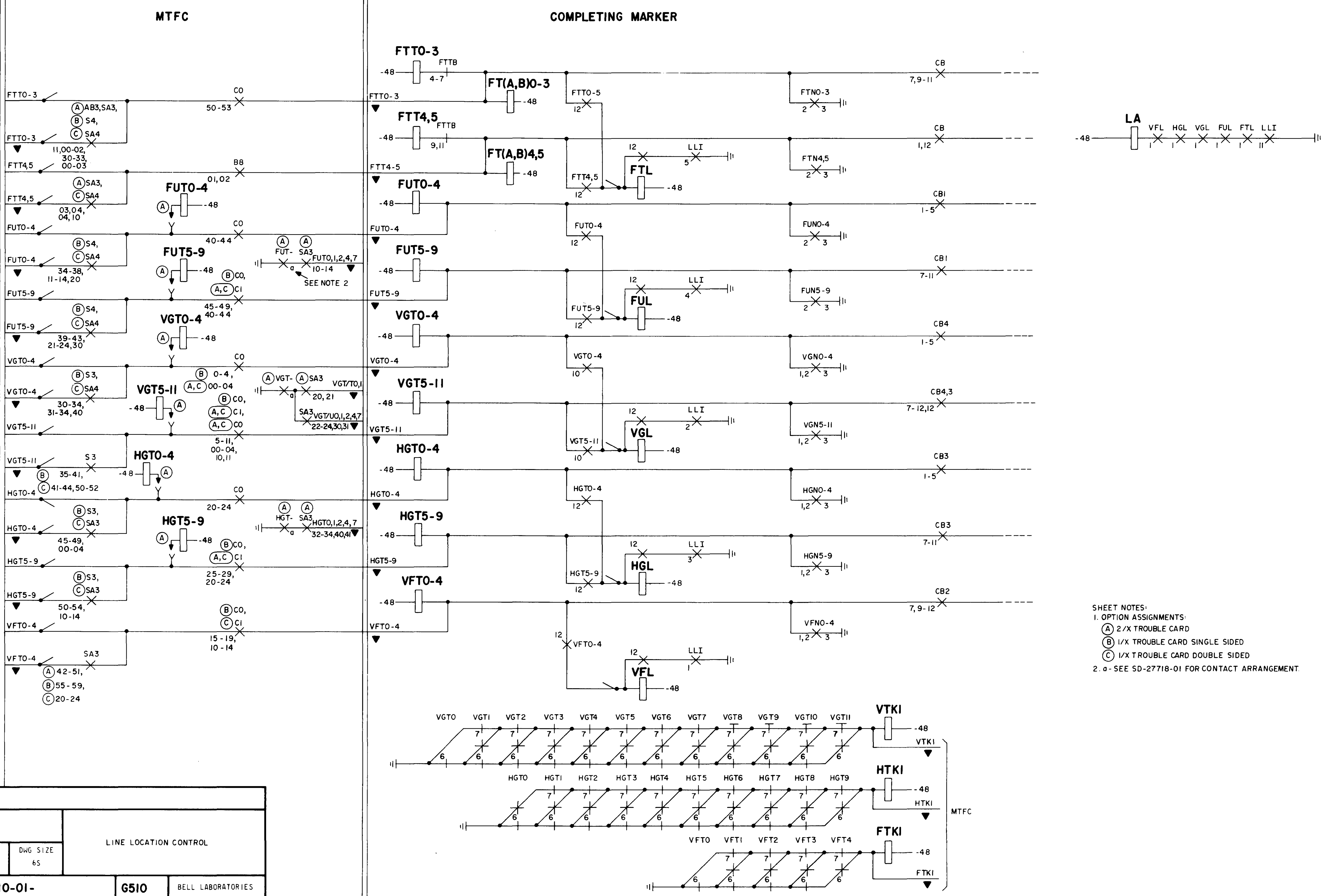
Ⓨ NUMBER GROUP USED ONLY FOR TRUNK NUMBERS.

Ⓩ NUMBER GROUP IS MIXED (TRUNK NUMBERS AND SUBSCRIBERS)

NUMBER GROUP TRANSLATION
OF TRUNK NUMBER TO LINE
LOCATION AND TRUNK NUMBER
CHECK

DWG SIZE	6S	
ISSUE	5	
BELL LABORATORIES	SFD-10-01-	G509

SFD-10-01-G509



SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD
Ⓑ 1/X TROUBLE CARD SINGLE SIDED
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED
2. a - SEE SD-27718-01 FOR CONTACT ARRANGEMENT.

ISSUE	DWG SIZE	LINE LOCATION CONTROL
5	6S	

SFD-10-01- G510 BELL LABORATORIES

SFD-10-01-G510

KS&E 191193 2-77 41397*

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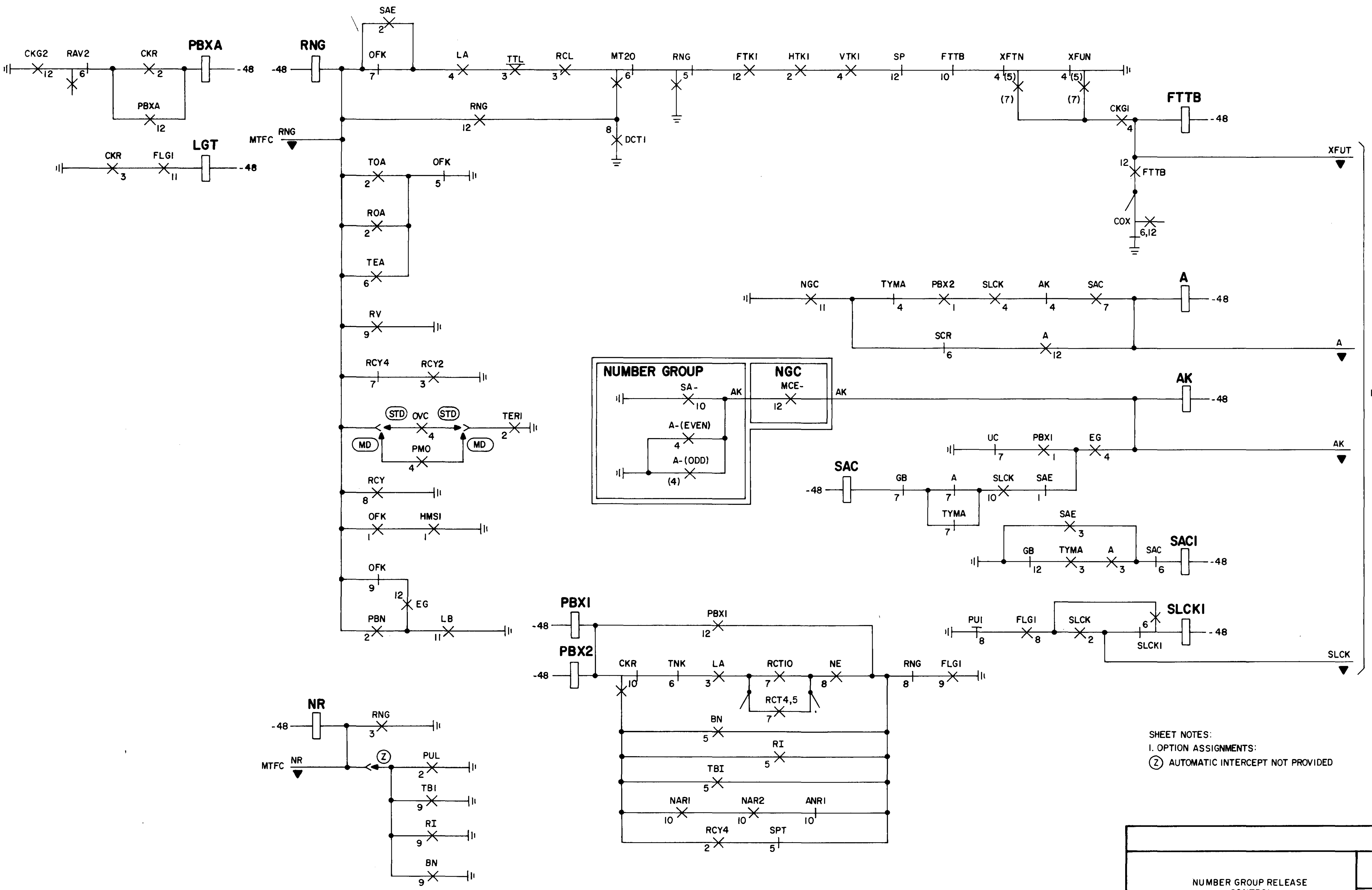
COMPLETING MARKER



SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓩ AUTOMATIC INTERCEPT NOT PROVIDED

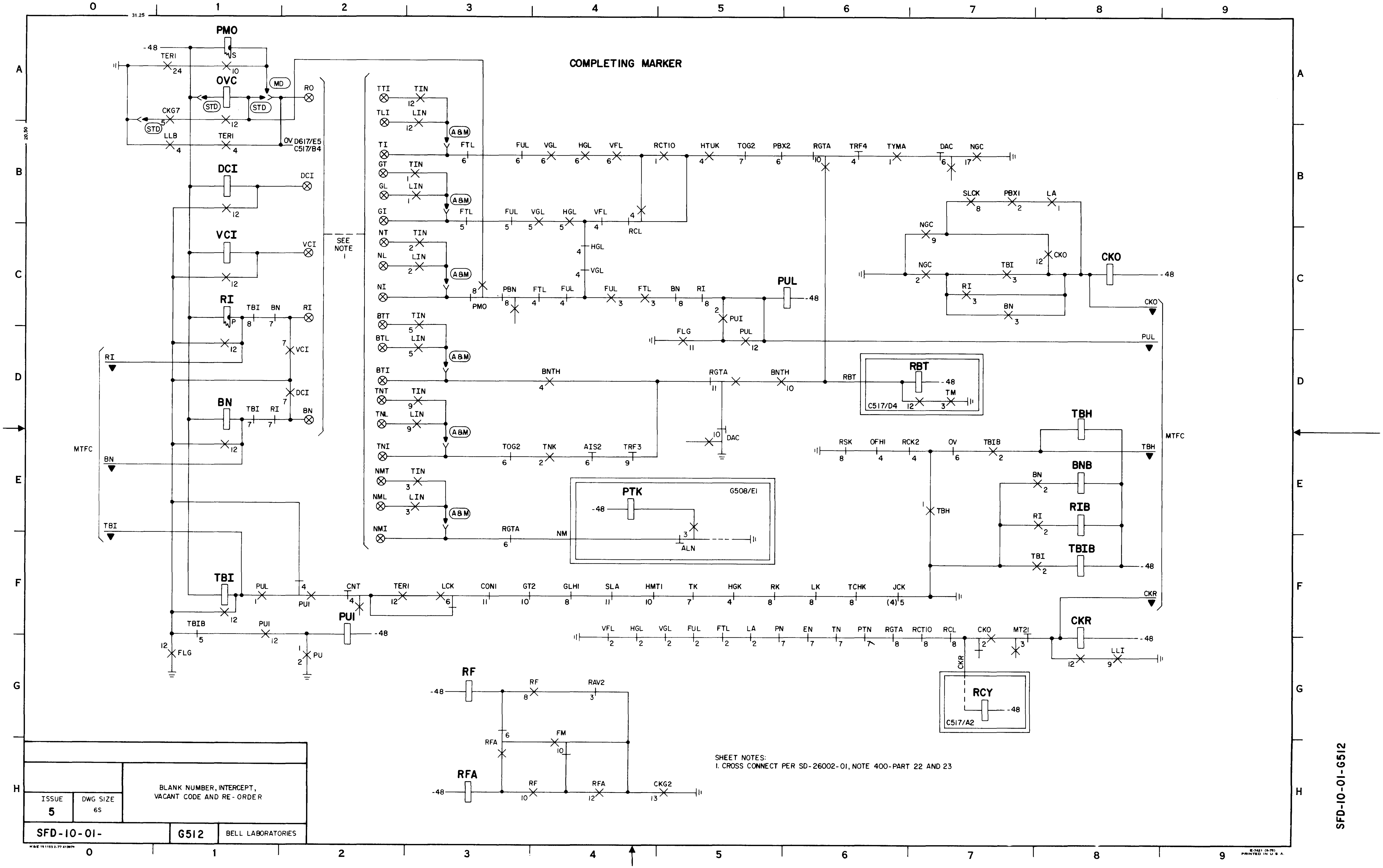
NUMBER GROUP RELEASE
CONTROL

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G511

SFD-10-01-G511

COMPLETING MARKER



SHEET NOTES:
1. CROSS CONNECT PER SD-26002-01, NOTE 400-PART 22 AND 23

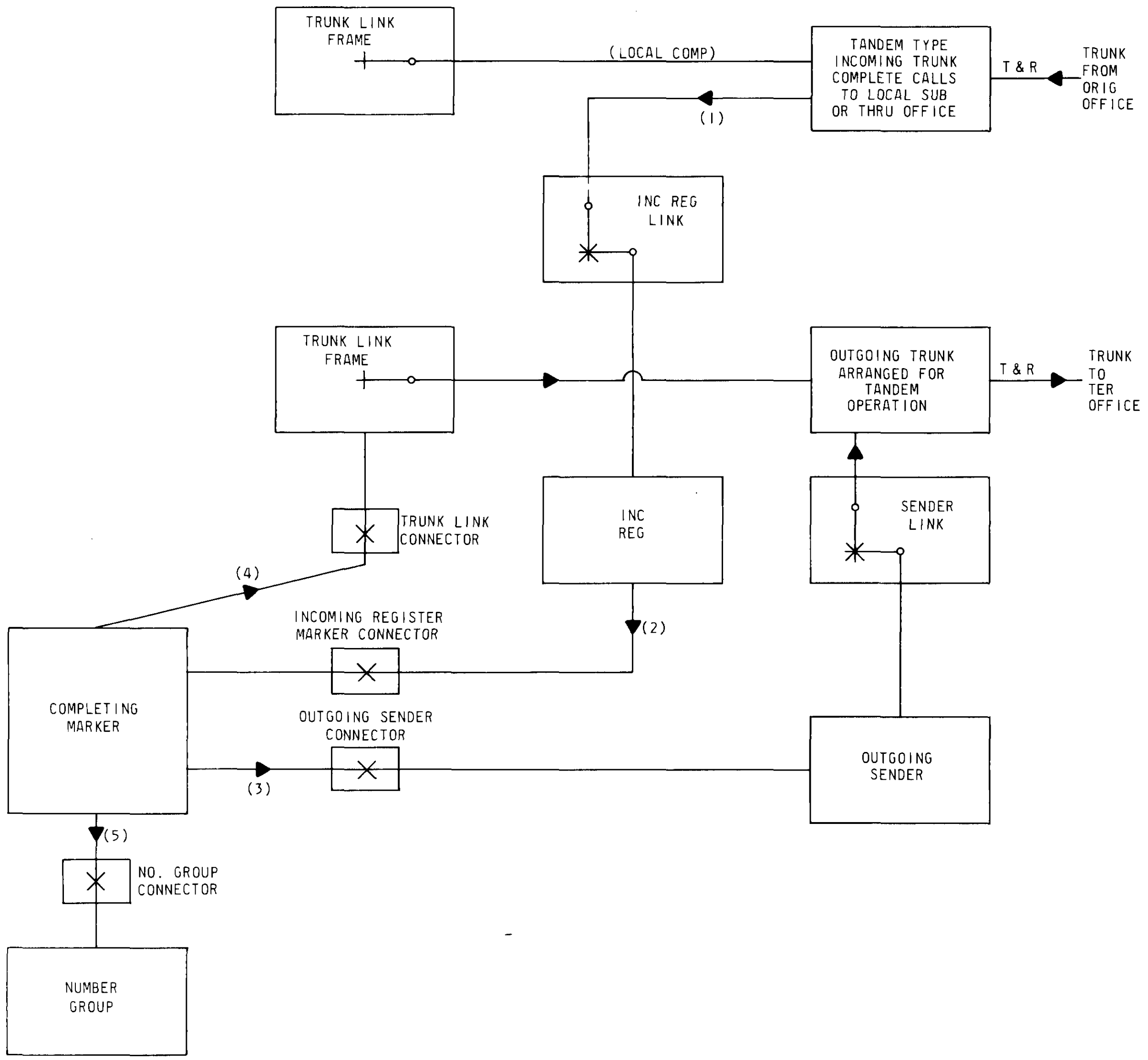
BLANK NUMBER, INTERCEPT,
VACANT CODE AND RE-ORDER

ISSUE	DWG SIZE
5	6S

SFD-10-01- G512 BELL LABORATORIES

SFD-10-01-G512

ESTABLISHING TANDEM SWITCHING CONNECTION



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D504	LINE LINK FRAME SEIZURE
D505	LINE LINK FRAME SEIZURE
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D508	PAIRED LINE LINK FRAMES AUXILIARY LINE LINK FRAME SEIZURE
D509	PAIRED LINE LINK FRAMES AUXILIARY LINE LINK CONTROL
D510	20,30,60 CLASSES OF SERVICE LINE VERIFICATION TEST AND INPUT TO COMPLETING MARKER
D511	100 CLASSES OF SERVICE LINE VERIFICATION TEST AND INPUT TO COMPLETING MARKER

SHEET NOTES:

1. ON A TANDEM CALL THE CONNECTION TO THE LINE LINK FRAME IN A TANDEM OFFICE IS ALMOST IDENTICAL TO THE LINE LINK CONNECTION ON A TERMINATING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE D SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION!

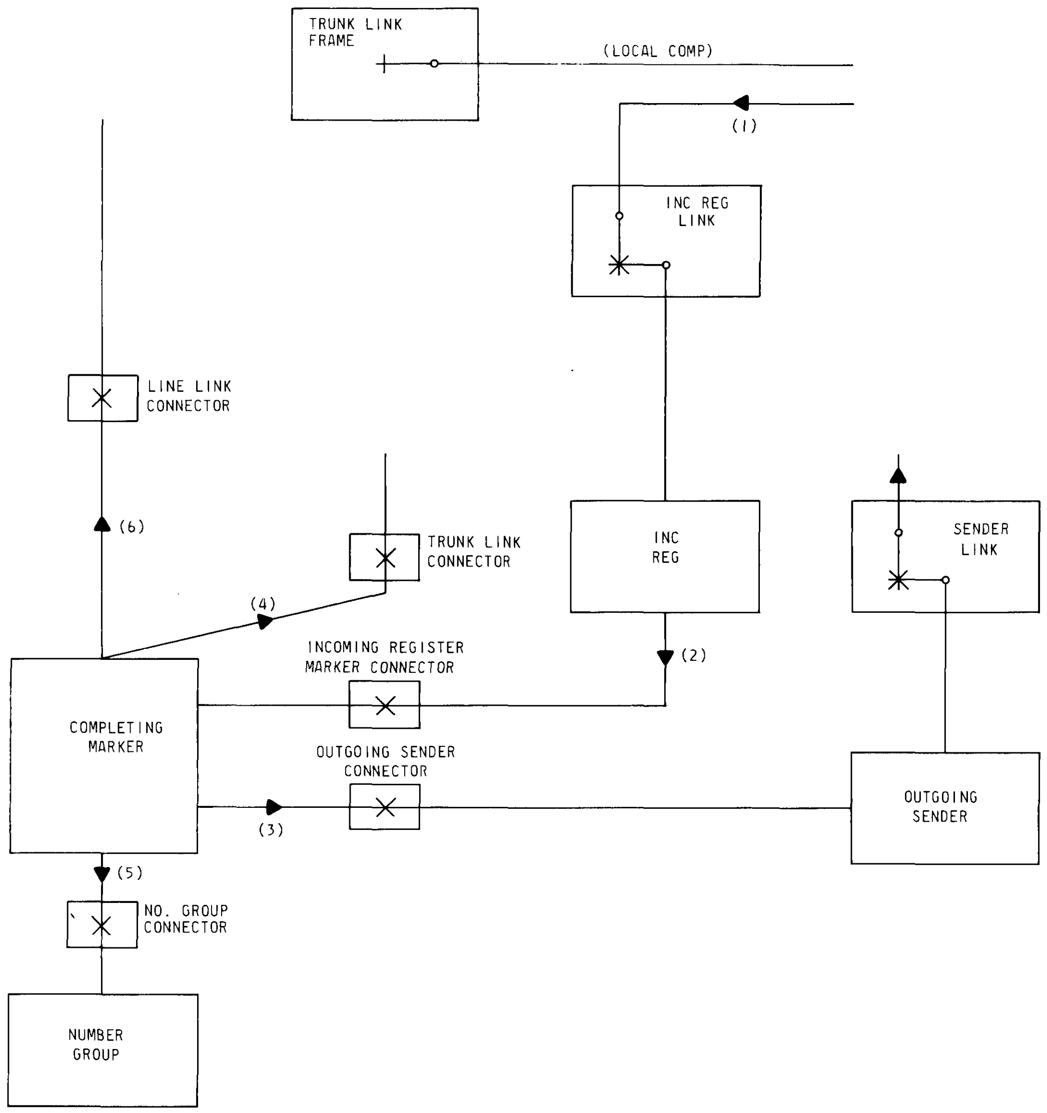
DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G6
CONNECTION TO LINE LINK
FRAME

DWG SIZE	ISSUE	
6S	5	
BELL LABORATORIES	SFD-10-01-	G601

SFD-10-01-G601
2 SHEETS, SHEET 1

ESTABLISHING TANDEM SWITCHING CONNECTION



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C504	JUNCTOR PATTERN UNITS CONTROL
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C517	RECYCLE AND ROUTE ADVANCE
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C520	RIGHT OR LEFT, REGULAR, EXTENSION, OR SECOND EXTENSION TRUNK LINK FRAME
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C522	COMPLETING MARKER CHANNEL TEST CONTROL
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C526	LINE LINK FRAME SELECT MAGNET OPERATION
C527	TRUNK LINK FRAME SELECT MAGNET OPERATION (SD-26032-01)
C528	TRUNK LINK FRAME SELECT & HOLD MAGNET OPERATION (SD-27879-01)
C529	HOLD MAGNET OPERATION (SD-26032-01)
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C533	LINKAGE CHECK AND HOLD MAGNET OPERATION
C534	OPTIONAL ARRANGEMENTS FOR HOLD MAGNET OPERATION
C535	COMPLETING MARKER - CONTINUITY AND FALSE CROSS AND GROUND TESTS
C537	NO TEST CONNECTOR

SHEET NOTES:

1. ON A TANDEM CALL, THE NETWORK CONNECTION IS ALMOST IDENTICAL TO THE NETWORK CONNECTION ON AN OUTGOING CALL. THE REFERENCE INDEX ON THIS SHEET IDENTIFIES THE C SECTION SHEET NUMBER WHICH SHOWS DETAILS OF THE PARTICULAR FUNCTION OR OPERATION.

CAUTION !

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G7
NETWORK CONNECTION

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES
SFD-10-01-
G701

SFD-10-01-G701
2 SHEETS, SHEET 1

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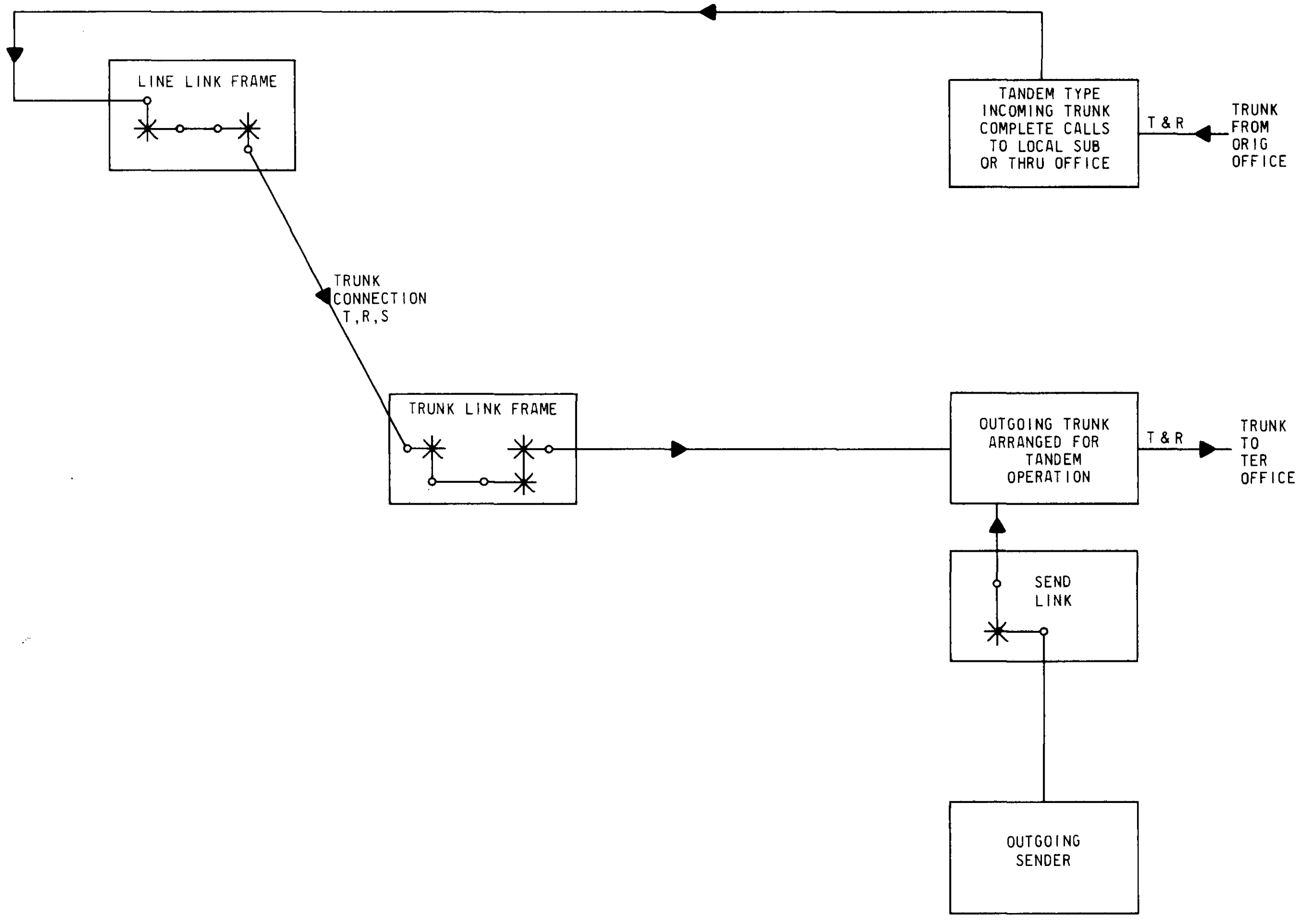
ESTABLISHING TANDEM SWITCHING CONNECTION



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G803	SEQUENCE CHART - COMPLETING MARKER RELEASE
G804	COMPLETING MARKER RELEASE
G805	COMPLETING MARKER RELEASE
G806	SEQUENCE CHART - MARKER ACTION FROM FAILURES (OUTGOING)
G807	COMPLETING MARKER TROUBLE RECORD CONTROL
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G809	SEQUENCE CHART - REGULAR CALL MF OUTGOING SENDER
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G827	ESTABLISHED CONNECTION - INCOMING CALL - TERMINATING OFFICE

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G8
COMPLETING MARKER RELEASE
AND SENDER OPERATION

	DWG SIZE	ISSUE
	6S	5
BELL LABORATORIES	SFD-10-01-	G801

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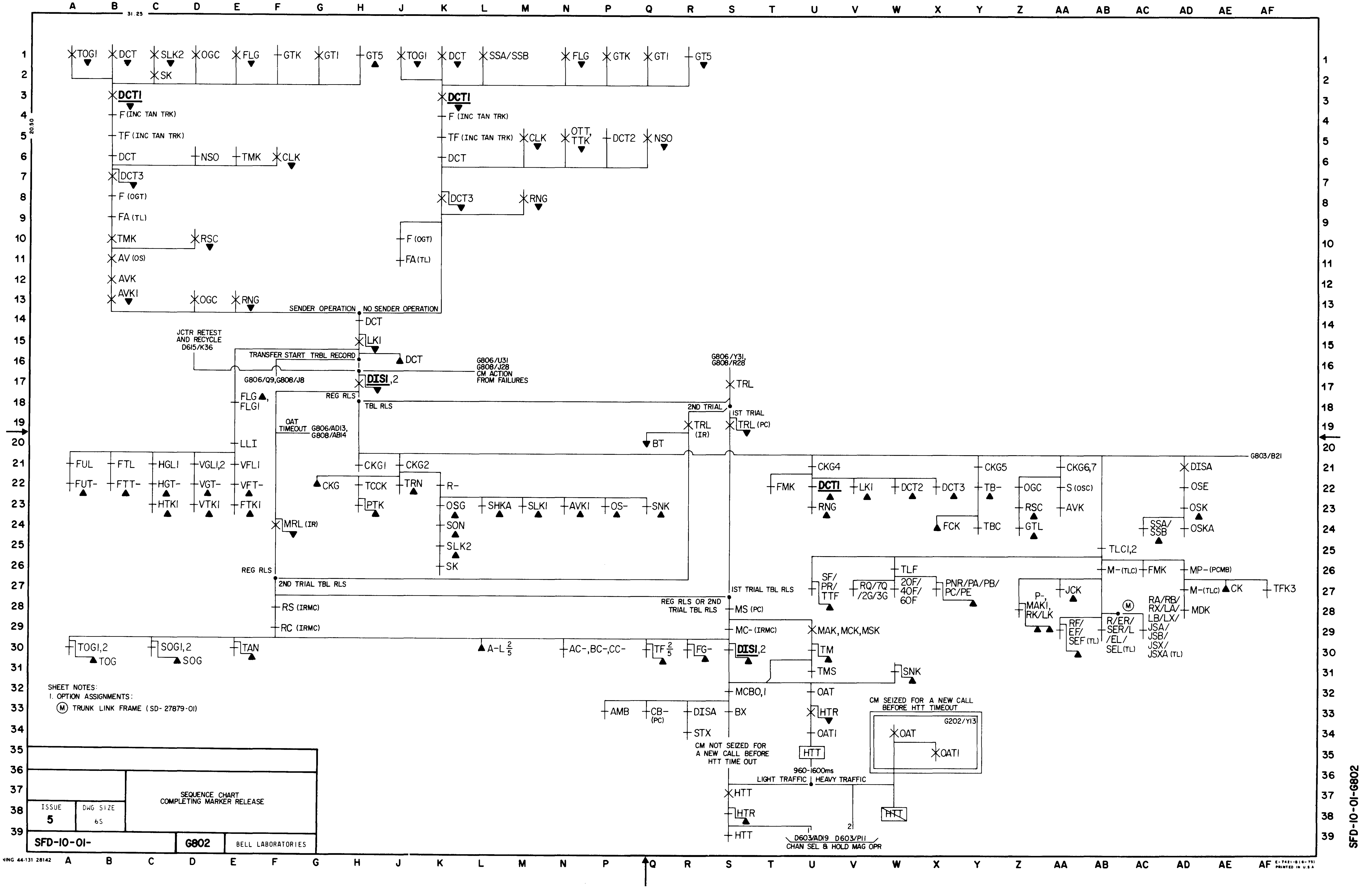


SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓜ TRUNK LINK FRAME (SD-27879-01)

SEQUENCE CHART
COMPLETING MARKER RELEASE

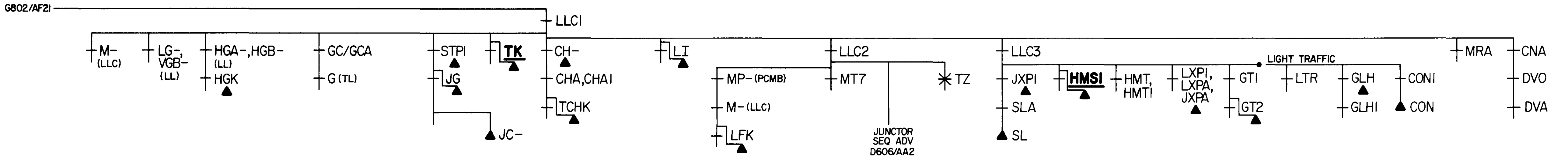
ISSUE 5

DWG SIZE 6S

SFD-10-01- G802

BELL LABORATORIES

SFD-10-01-G802



SEQUENCE CHART
COMPLETING MARKER RELEASE

DWG SIZE 6S	ISSUE 5

BELL LABORATORIES SFD-10-01- G803

SFD-10-01-G803

BRUNING 44-131 28142

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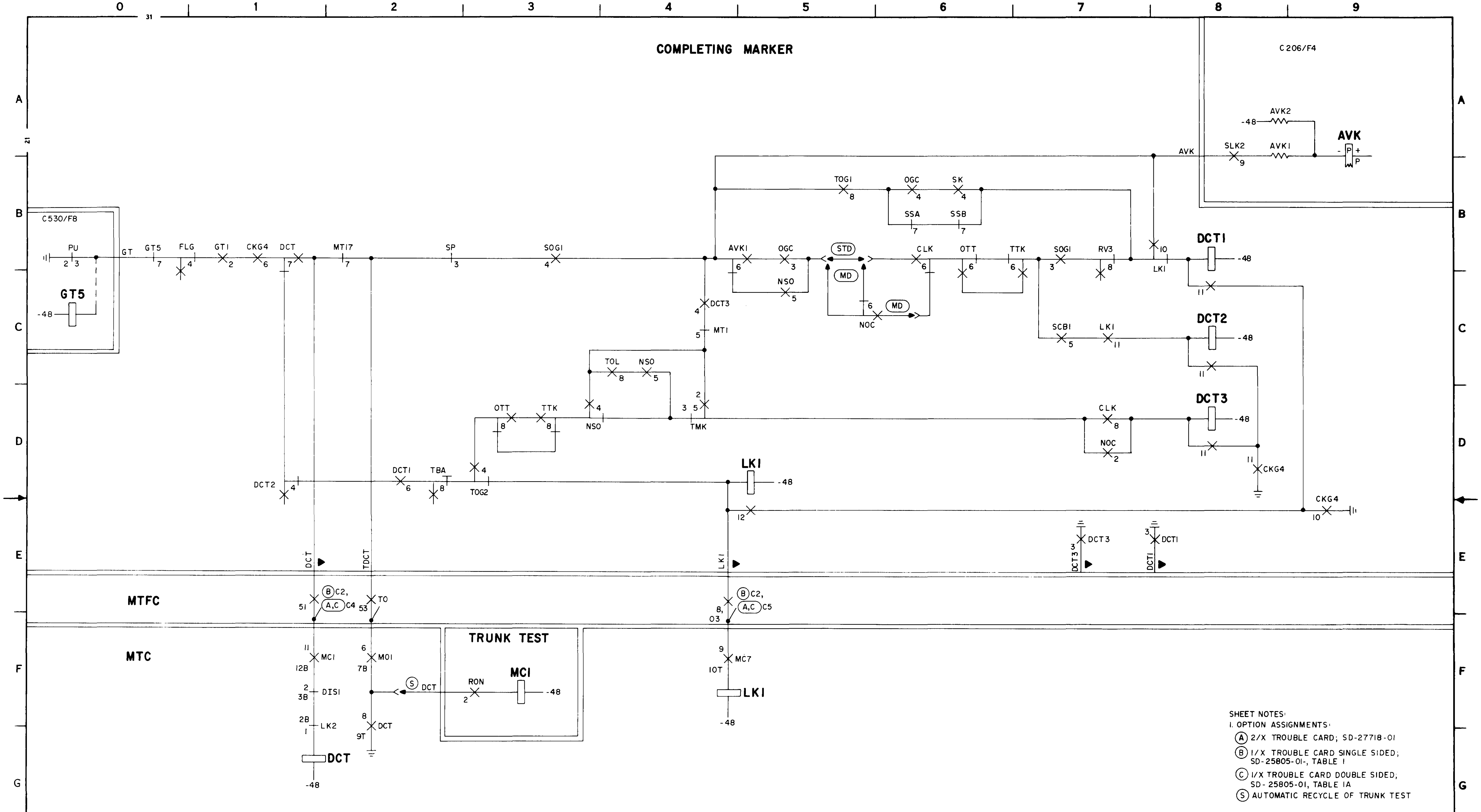

SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01-, TABLE 1

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED, SD-25805-01, TABLE 1A

Ⓢ AUTOMATIC RECYCLE OF TRUNK TEST

ISSUE 5

SFD-10-01-G804

COMPLETING MARKER RELEASE

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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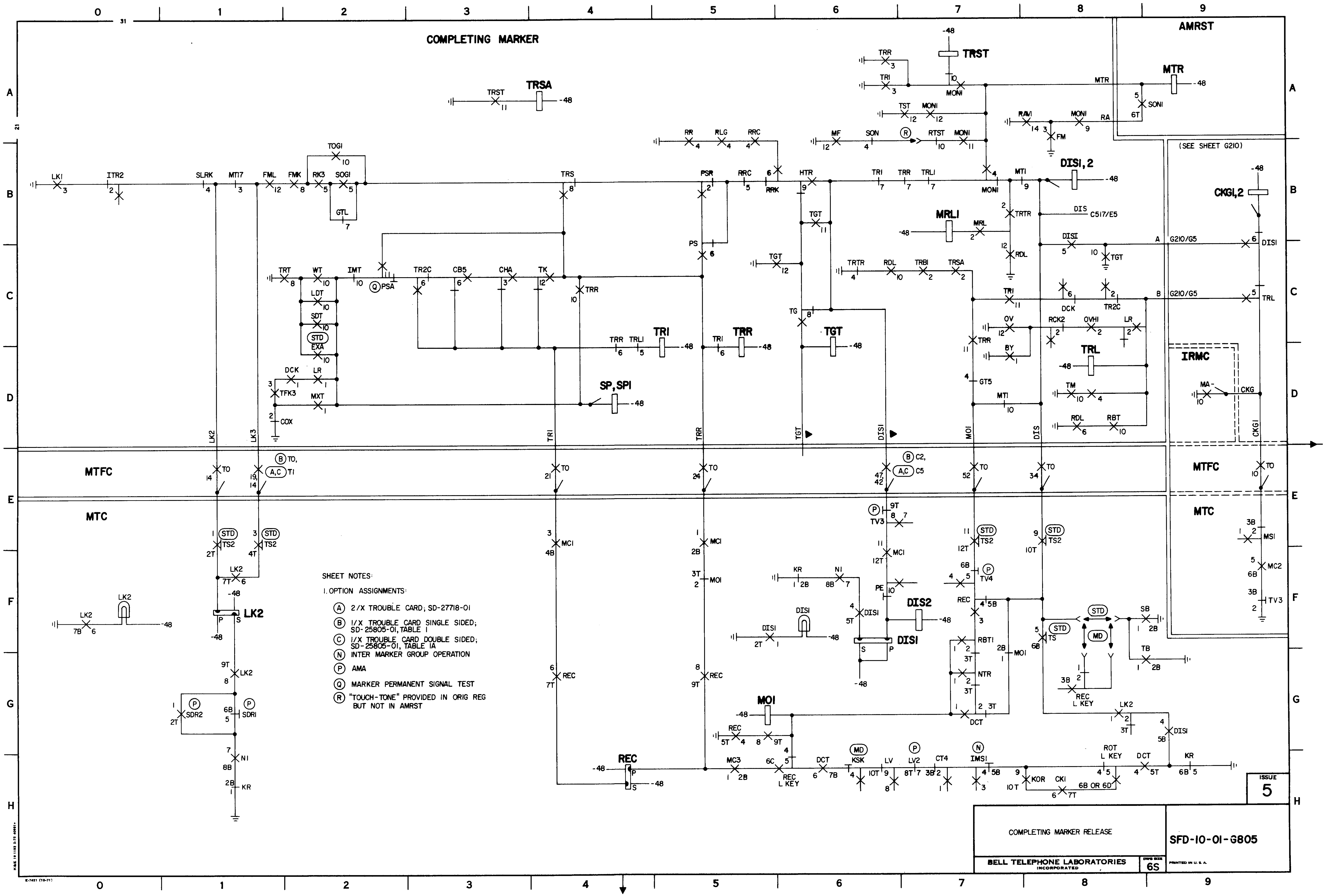
SFD-10-01-G804



SHEET NOTES:

1. OPTION ASSIGNMENTS:

Ⓐ 2/X TROUBLE CARD; SD-27718-01

Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1

Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A

Ⓝ INTER MARKER GROUP OPERATION

Ⓟ AMA

Ⓠ MARKER PERMANENT SIGNAL TEST

Ⓡ "TOUCH-TONE" PROVIDED IN ORIG REG BUT NOT IN AMRST

ISSUE 5

COMPLETING MARKER RELEASE

SFD-10-01-G805

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

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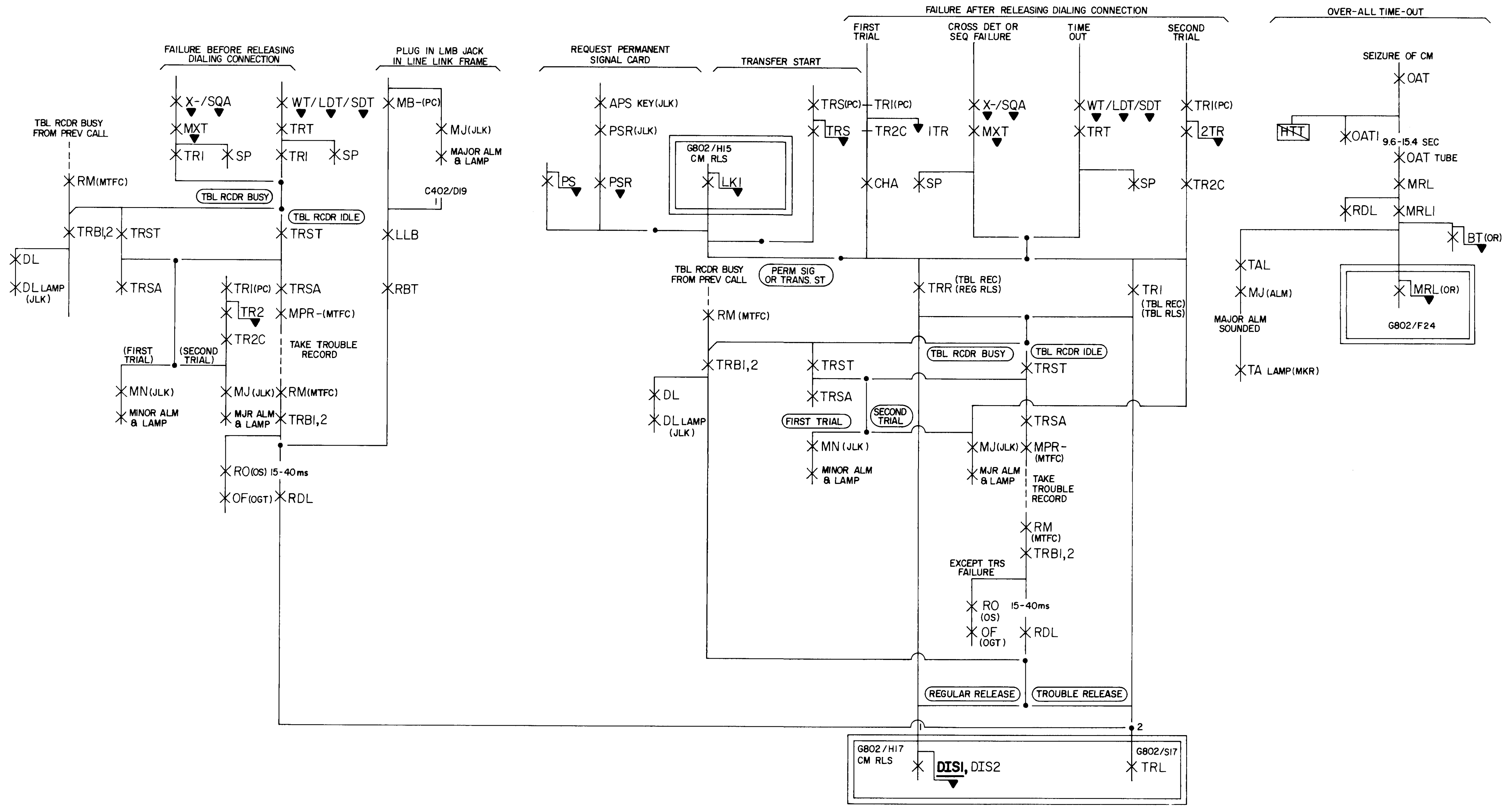
E-7421 (10-71)

SFD-10-01-G805

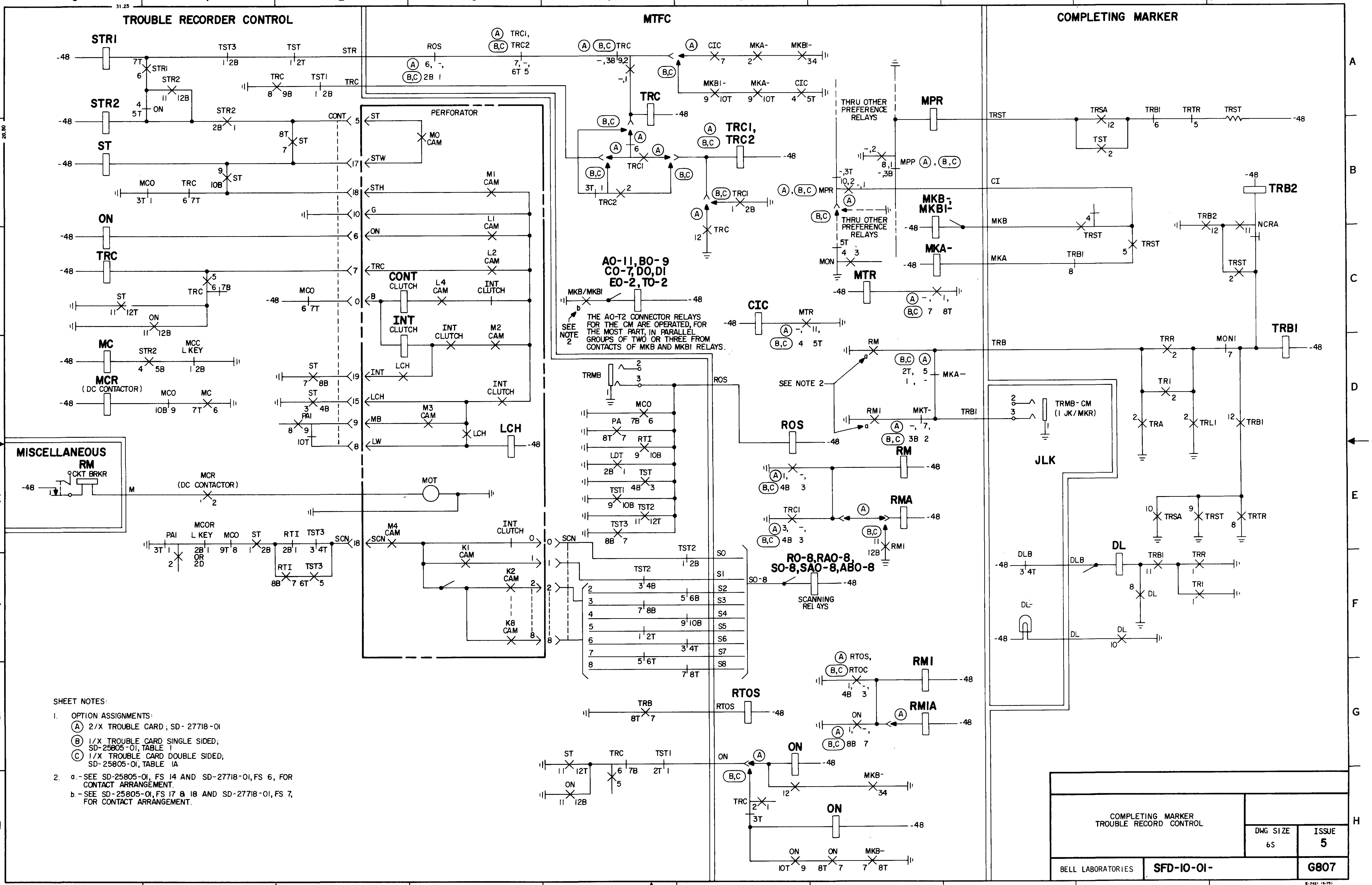


SEQUENCE CHART
MARKER ACTION FROM FAILURES
(OUTGOING)

ISSUE	DWG SIZE
5	6S

SFD-10-01- G806 BELL LABORATORIES

SFD-10-01-G806



SHEET NOTES:

1. OPTION ASSIGNMENTS:
   - Ⓐ 2/X TROUBLE CARD; SD-27718-01
   - Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE 1
   - Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE 1A
2. a.-SEE SD-25805-01, FS 14 AND SD-27718-01, FS 6, FOR CONTACT ARRANGEMENT.
   b.-SEE SD-25805-01, FS 17 & 18 AND SD-27718-01, FS 7, FOR CONTACT ARRANGEMENT.

COMPLETING MARKER
TROUBLE RECORD CONTROL

DWG SIZE 6S
ISSUE 5

BELL LABORATORIES
SFD-10-01-
G807

E-7421 (6-73)
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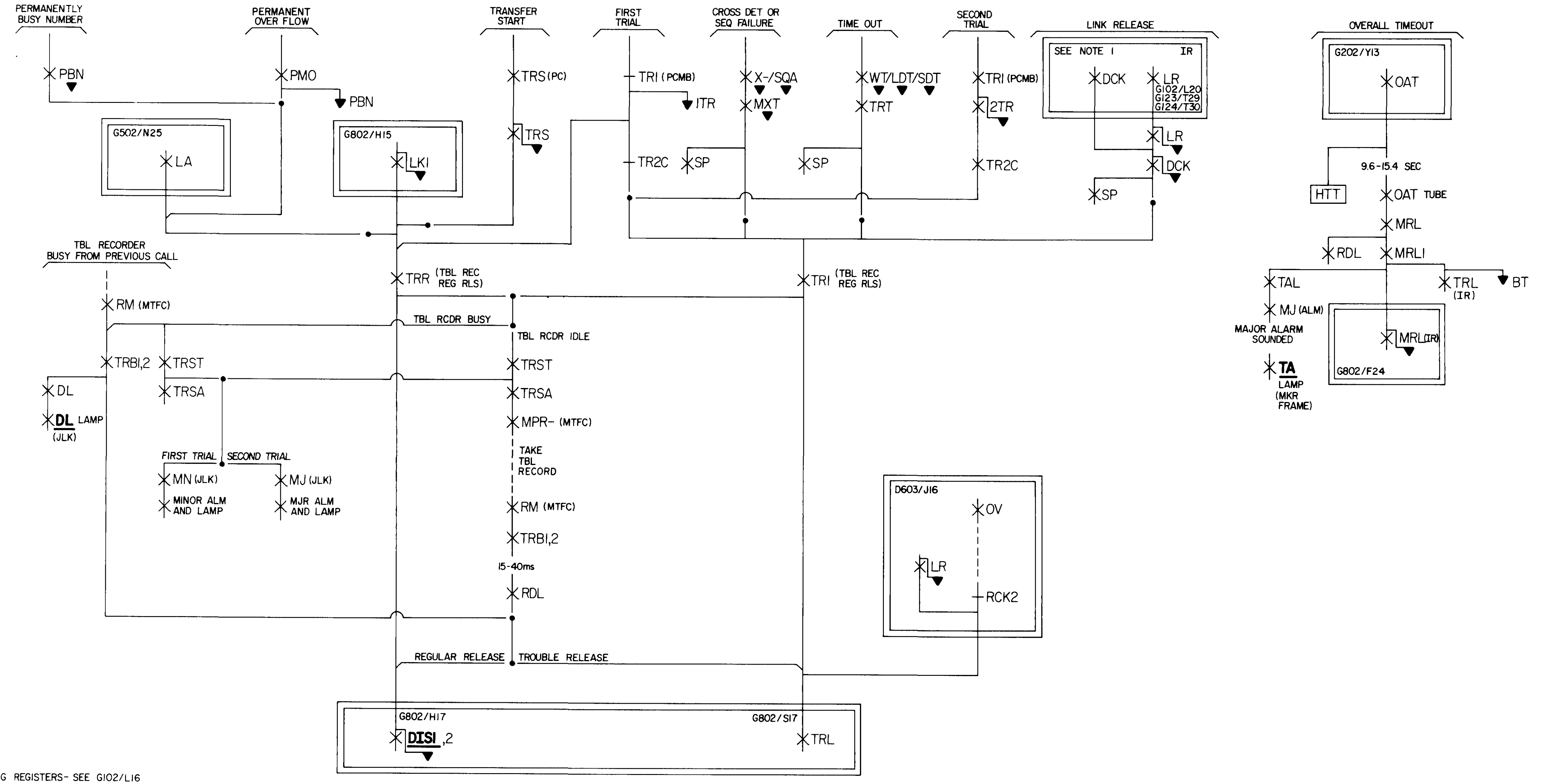
SFD-10-01-G807



SHEET NOTES:

1. MF INCOMING REGISTERS- SEE G102/L16
   DP INCOMING REGISTERS- SEE G123/T24, G125/T24

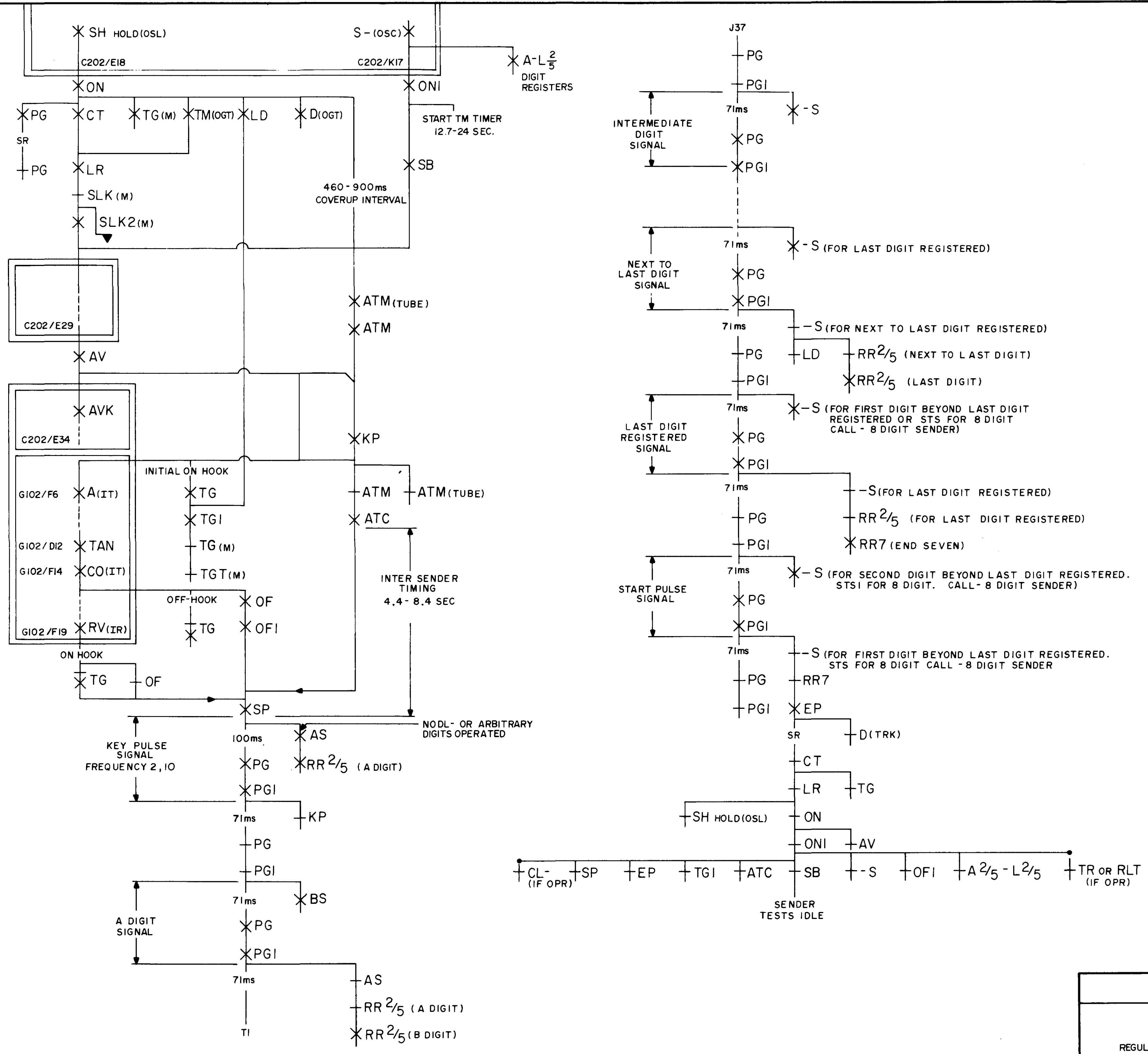
ISSUE 5

SEQUENCE CHART
MARKER ACTION FROM FAILURES

SFD-10-01- G808

BELL LABORATORIES

SFD-10-01-G808


SH HOLD(OSL)
S-(OSC)
C202/E18
C202/K17
A-L 2/5
DIGIT REGISTERS
ON
ONI
PG
CT
TG(M)
TM(OGT)
LD
D(OGT)
START TM TIMER 12.7-24 SEC.
SR
PG
LR
SB
SLK(M)
SLK2(M)
460-900ms COVERUP INTERVAL
C202/E29
ATM(TUBE)
ATM
AV
AVK
C202/E34
KP
INITIAL ON HOOK
G102/F6
A(IT)
TG
ATM
ATM(TUBE)
TG1
ATC
G102/D12
TAN
TG(M)
G102/F14
CO(IT)
TGT(M)
INTER SENDER TIMING 4.4-8.4 SEC
OFF-HOOK
OF
G102/F19
RV(IR)
TG
OF1
ON HOOK
TG
OF
SP
NODL- OR ARBITRARY DIGITS OPERATED
100ms
AS
KEY PULSE SIGNAL FREQUENCY 2,10
PG
RR 2/5 (A DIGIT)
PG1
71ms
KP
PG
PG1
71ms
BS
A DIGIT SIGNAL
PG
PG1
71ms
AS
RR 2/5 (A DIGIT)
T1
RR 2/5 (B DIGIT)
J37
PG
PG1
71ms
-S
INTERMEDIATE DIGIT SIGNAL
PG
PG1
71ms
-S (FOR LAST DIGIT REGISTERED)
NEXT TO LAST DIGIT SIGNAL
PG
PG1
71ms
-S (FOR NEXT TO LAST DIGIT REGISTERED)
PG
LD
RR2/5 (NEXT TO LAST DIGIT)
PG1
RR2/5 (LAST DIGIT)
71ms
-S (FOR FIRST DIGIT BEYOND LAST DIGIT REGISTERED OR STS FOR 8 DIGIT CALL - 8 DIGIT SENDER)
LAST DIGIT REGISTERED SIGNAL
PG
PG1
71ms
-S (FOR LAST DIGIT REGISTERED)
PG
RR 2/5 (FOR LAST DIGIT REGISTERED)
PG1
RR7 (END SEVEN)
71ms
-S (FOR SECOND DIGIT BEYOND LAST DIGIT REGISTERED. STS1 FOR 8 DIGIT. CALL- 8 DIGIT SENDER)
START PULSE SIGNAL
PG
PG1
71ms
-S (FOR FIRST DIGIT BEYOND LAST DIGIT REGISTERED. STS FOR 8 DIGIT CALL -8 DIGIT SENDER
PG
RR7
PG1
EP
SR
D(TRK)
CT
LR
TG
SH HOLD(OSL)
ON
ONI
AV
CL- (IF OPR)
SP
EP
TG1
ATC
SB
-S
OF1
A 2/5 - L 2/5
TR OR RLT (IF OPR)
SENDER TESTS IDLE

SEQUENCE CHART
REGULAR CALL MF OUTGOING SENDER

DWG SIZE 6S

ISSUE 5

BELL LABORATORIES

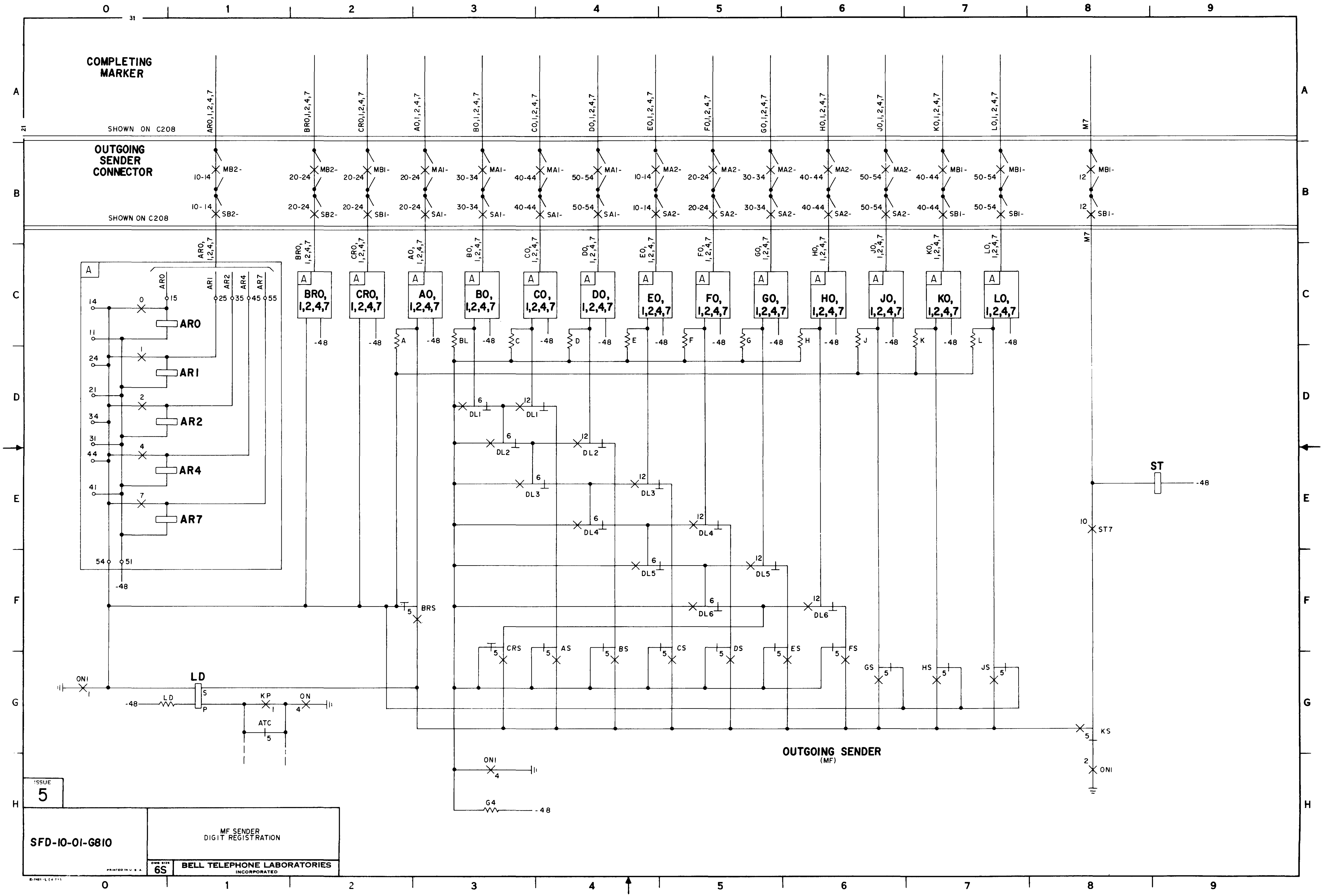
SFD-10-01-

G809

SFD-10-01-G809

BRUNING 44-131 28142

E-7421-8(6-75) PRINTED IN U.S.A.



ISSUE
5

SFD-10-01-G810

MF SENDER
DIGIT REGISTRATION

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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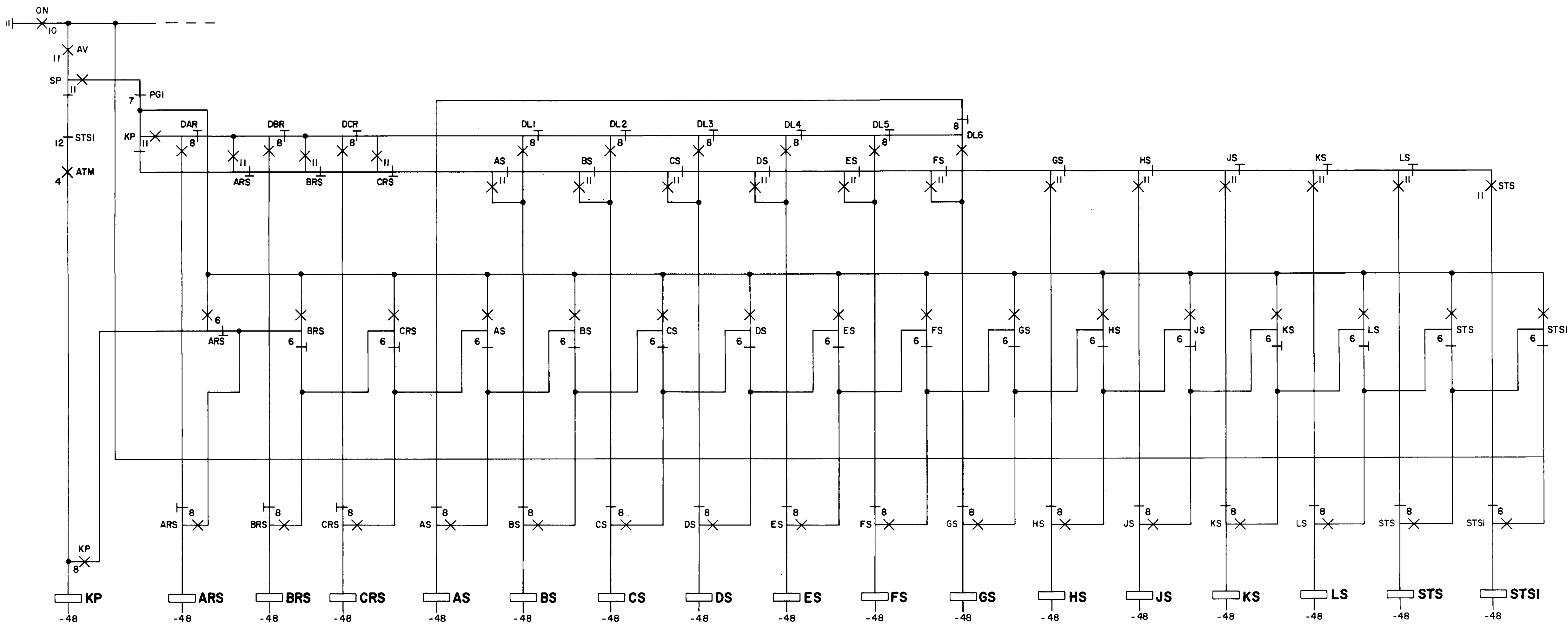
SFD-10-01-G810

OUTGOING SENDER

(MF)



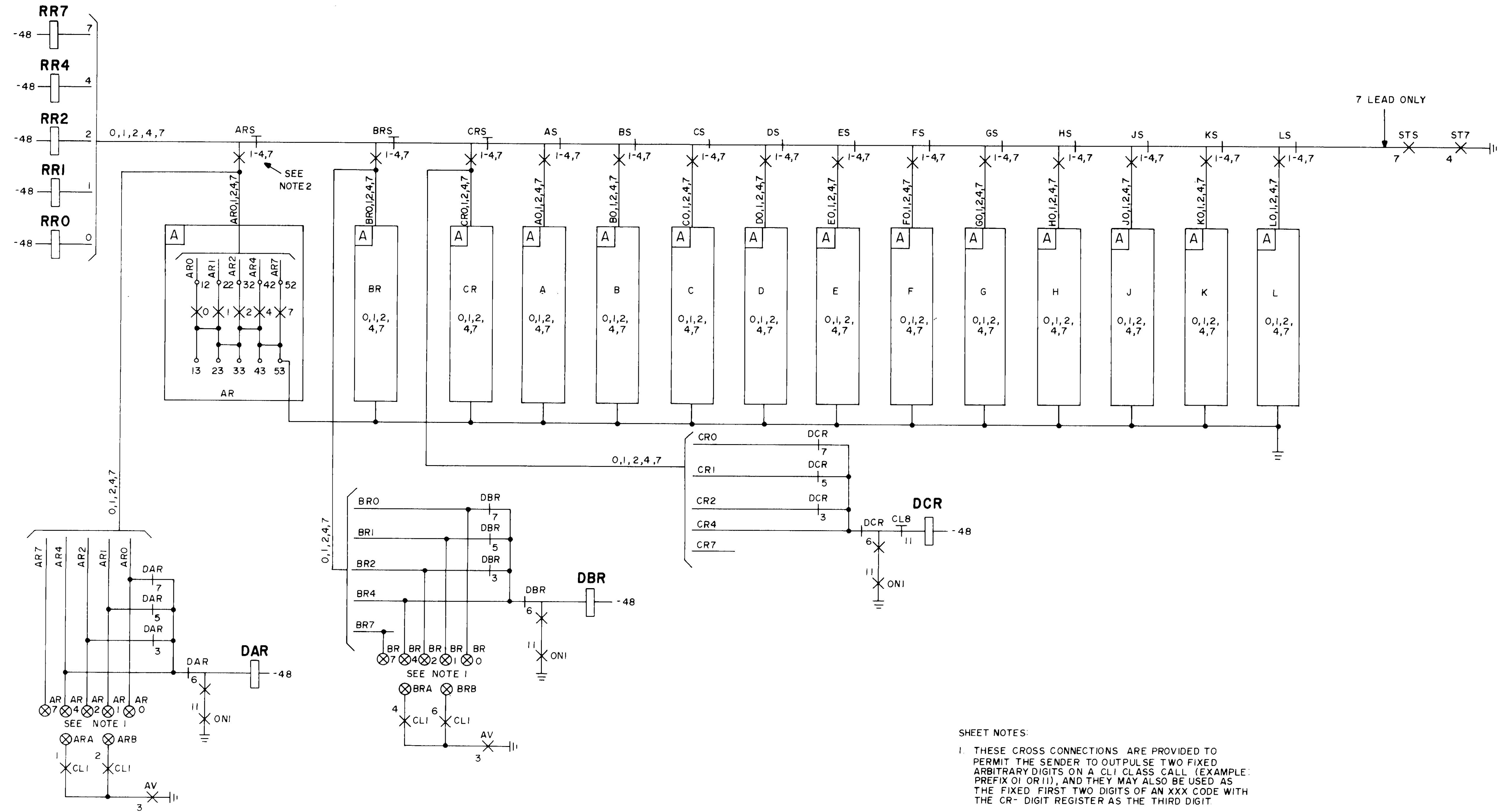
MF SENDER-DIGIT STEERING
FOR OUTPULSING

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G811

SFD-10-01-G811

OUTGOING SENDER
(MF)



SHEET NOTES:

1. THESE CROSS CONNECTIONS ARE PROVIDED TO PERMIT THE SENDER TO OUTPULSE TWO FIXED ARBITRARY DIGITS ON A CLI CLASS CALL (EXAMPLE: PREFIX 01 OR 11), AND THEY MAY ALSO BE USED AS THE FIXED FIRST TWO DIGITS OF AN XXX CODE WITH THE CR- DIGIT REGISTER AS THE THIRD DIGIT.
2. CONTACTS 1-4,7 CORRESPOND TO LEADS 0,1,2,4,7 RESPECTIVELY.

ISSUE
5

SFD-10-01-G812

MF SENDER
DIGIT REGISTER OUTPUT

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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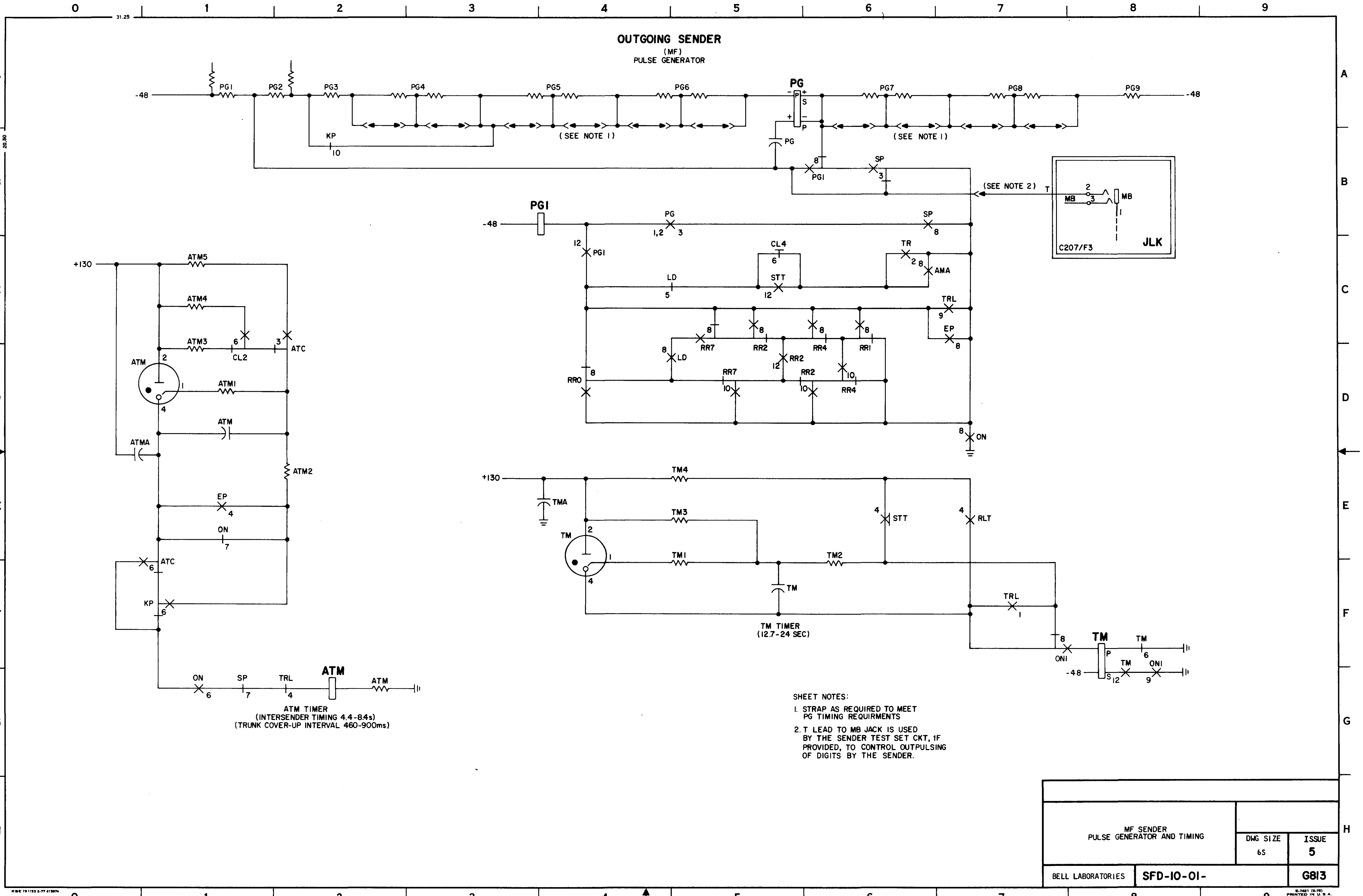
SFD-10-01-G812

OUTGOING SENDER
(MF)
PULSE GENERATOR

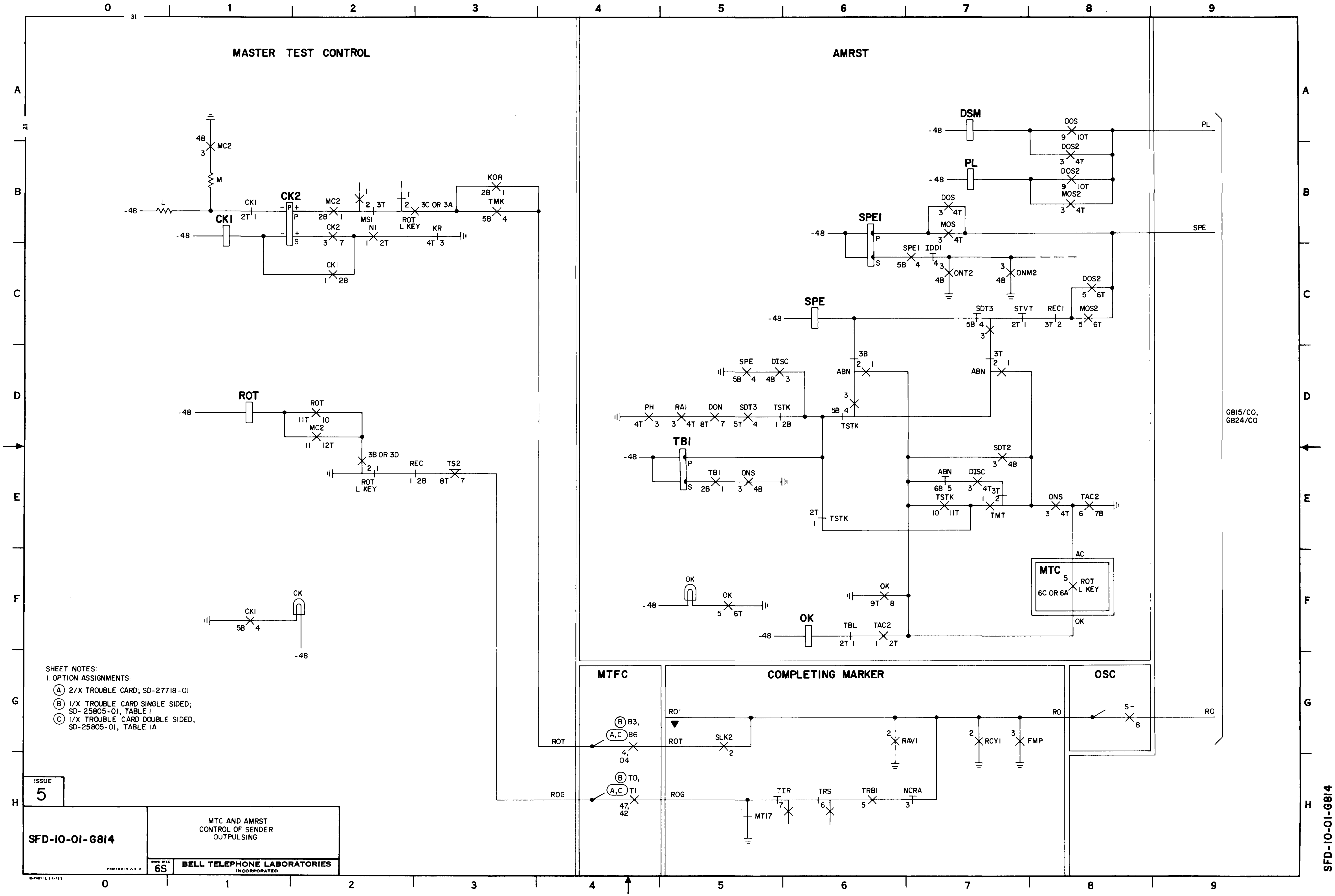


SHEET NOTES:

1. STRAP AS REQUIRED TO MEET PG TIMING REQUIRMENTS
2. T LEAD TO MB JACK IS USED BY THE SENDER TEST SET CKT, IF PROVIDED, TO CONTROL OUTPULSING OF DIGITS BY THE SENDER.

MF SENDER PULSE GENERATOR AND TIMING	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G813

SFD-10-01-G813



SHEET NOTES:
1. OPTION ASSIGNMENTS:
Ⓐ 2/X TROUBLE CARD; SD-27718-01
Ⓑ 1/X TROUBLE CARD SINGLE SIDED; SD-25805-01, TABLE I
Ⓒ 1/X TROUBLE CARD DOUBLE SIDED; SD-25805-01, TABLE IA

ISSUE
5

SFD-10-01-G814

MTC AND AMRST
CONTROL OF SENDER
OUTPULSING

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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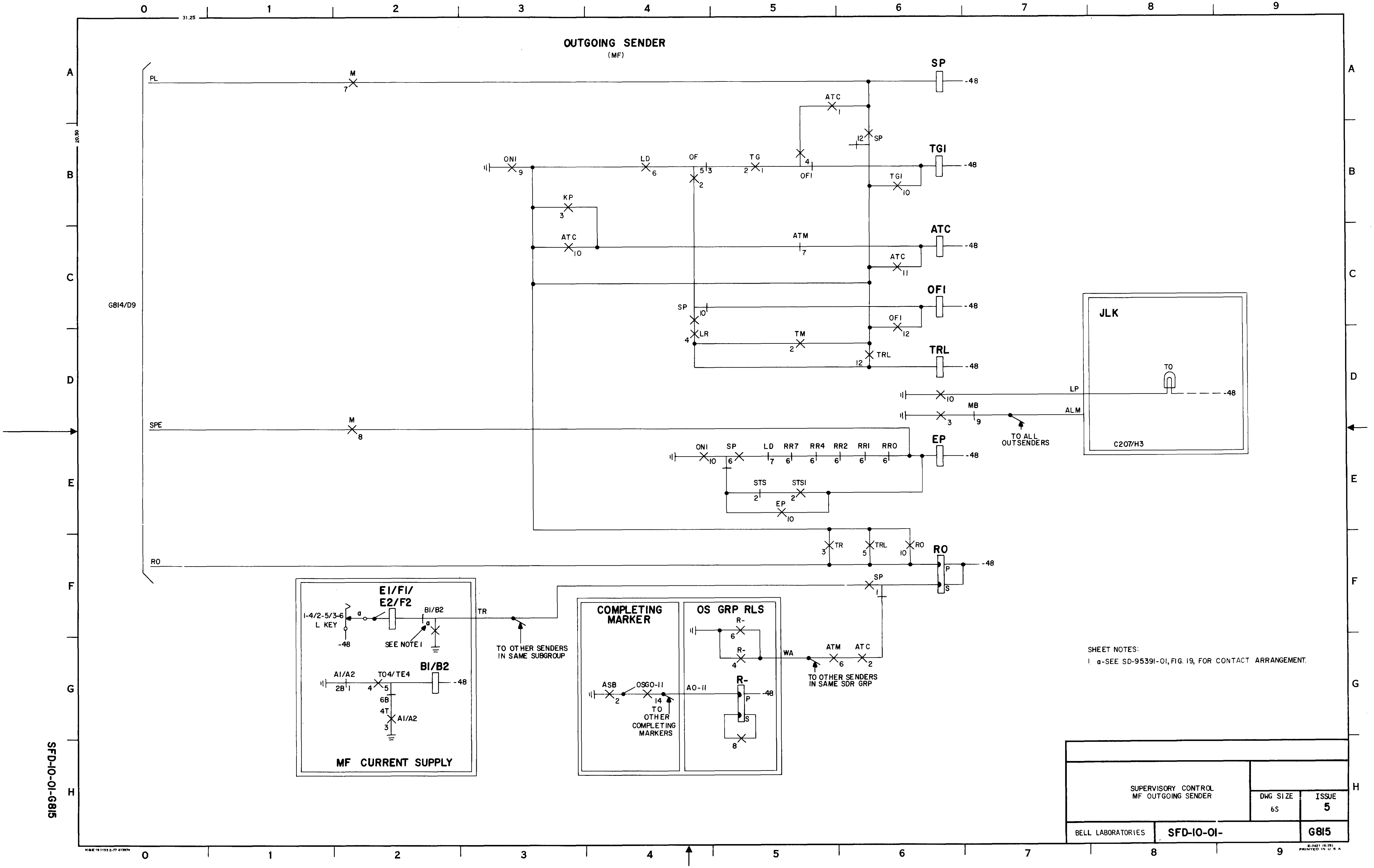
E-7481-L (4-73)

SFD-10-01-G814



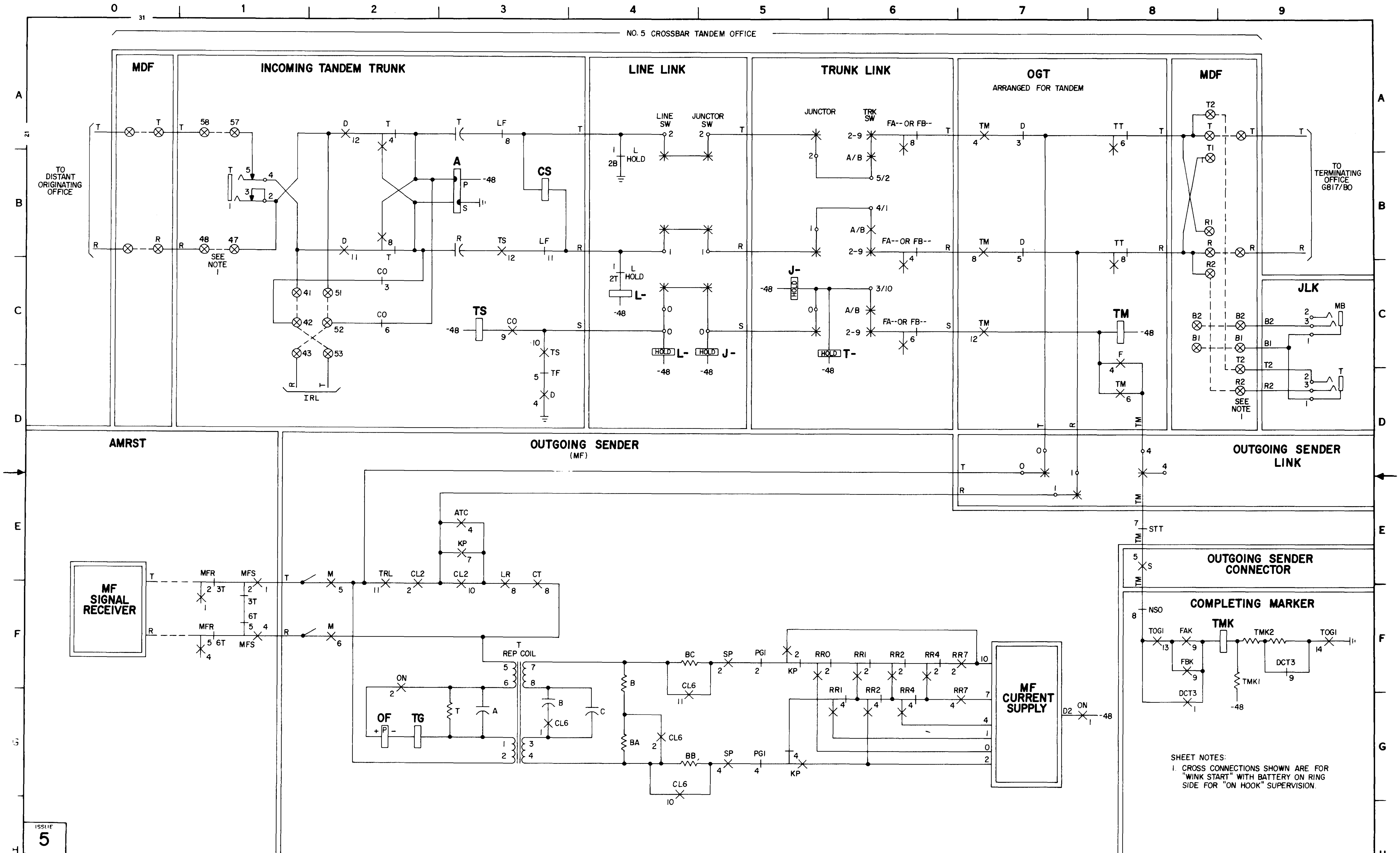
SHEET NOTES:
1. a-SEE SD-95391-01, FIG. 19, FOR CONTACT ARRANGEMENT.

SUPERVISORY CONTROL
MF OUTGOING SENDER

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G815

SFD-10-01-G815



SHEET NOTES:

1. CROSS CONNECTIONS SHOWN ARE FOR "WINK START" WITH BATTERY ON RING SIDE FOR "ON HOOK" SUPERVISION.

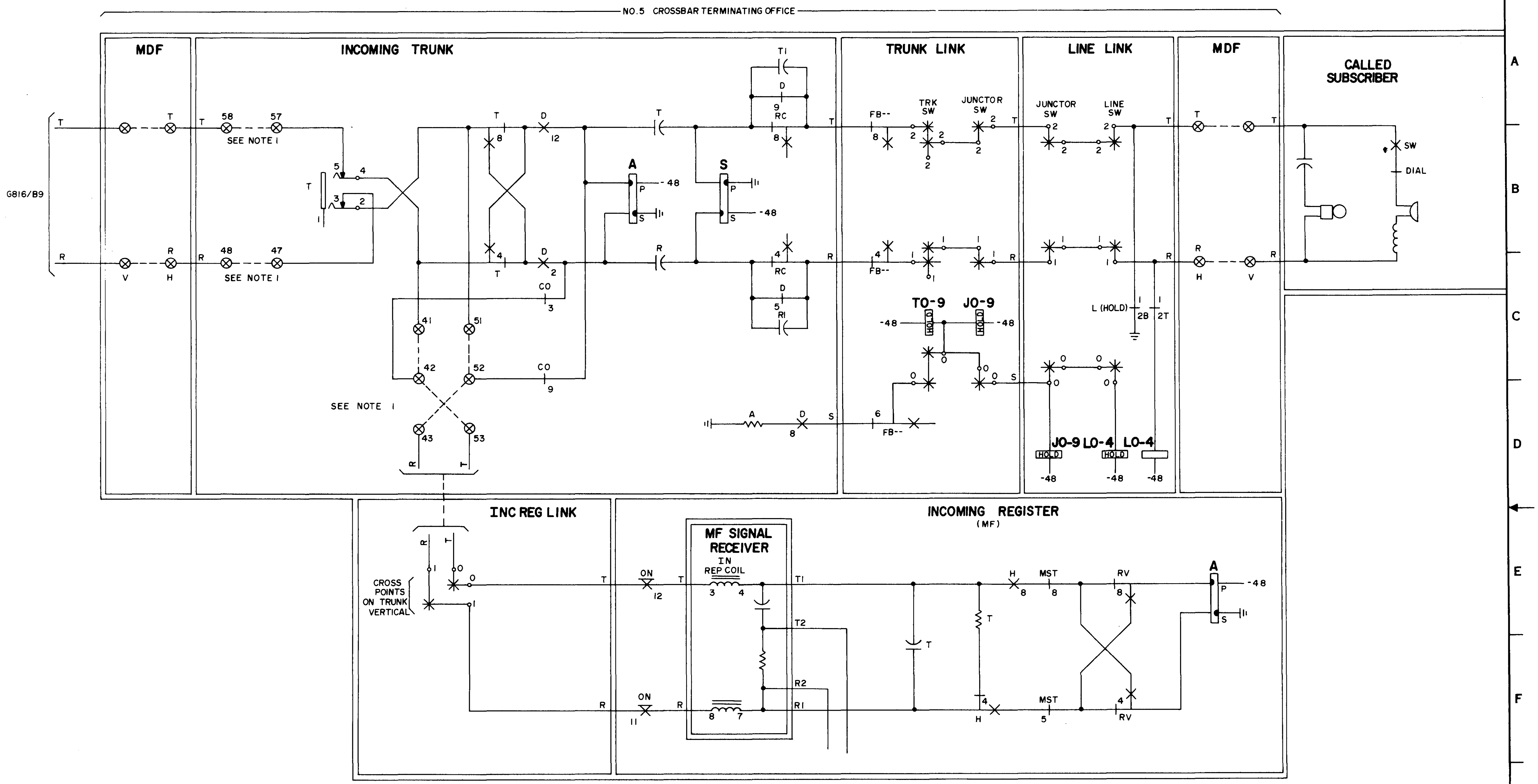
ISSUE 5

SFD-10-01-G816

ESTABLISHED CONNECTION
TANDEM CALL PULSING AND
TALKING PATH (MF)

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED



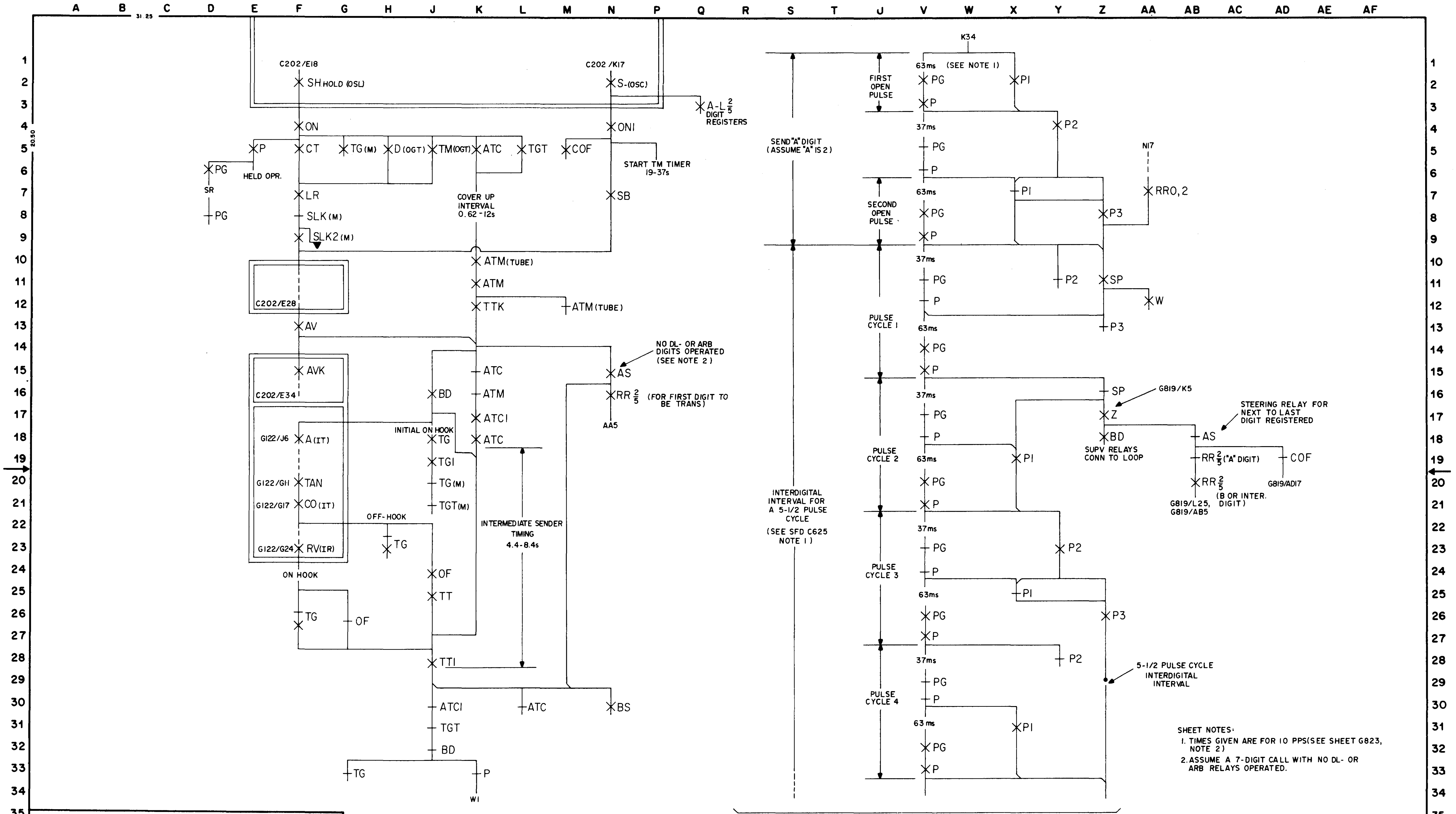
SHEET NOTES:

1. CROSS CONNECTIONS SHOWN ARE FOR "WINK START" WITH BATTERY ON RING SIDE FOR "ON HOOK" SUPERVISION. FOR COMPLETE CROSS CONN INFORMATION REFER TO SD-26070-01.

ESTABLISHED CONNECTION
INCOMING CALL
TERMINATING OFFICE

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G817

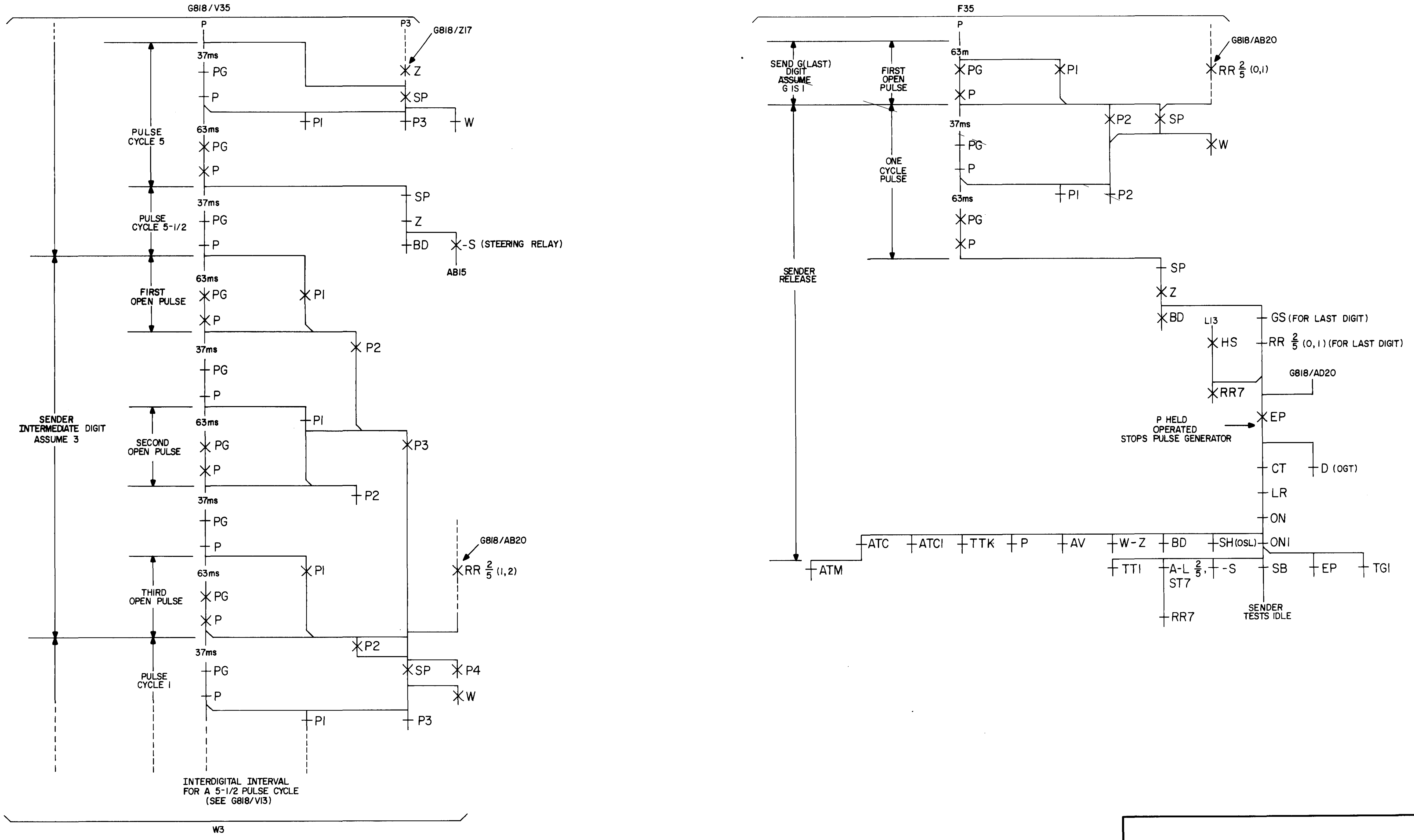


SHEET NOTES:
1. TIMES GIVEN ARE FOR 10 PPS(SEE SHEET G823, NOTE 2)
2. ASSUME A 7-DIGIT CALL WITH NO DL- OR ARB RELAYS OPERATED.

ISSUE	DWG SIZE	
5	6S	SEQUENCE CHART REGULAR CALL DP SENDER

SFD-10-01- G818 BELL LABORATORIES

SFD-10-01-G818



SEQUENCE CHART
REGULAR CALL DP SENDER

DWG SIZE 6S

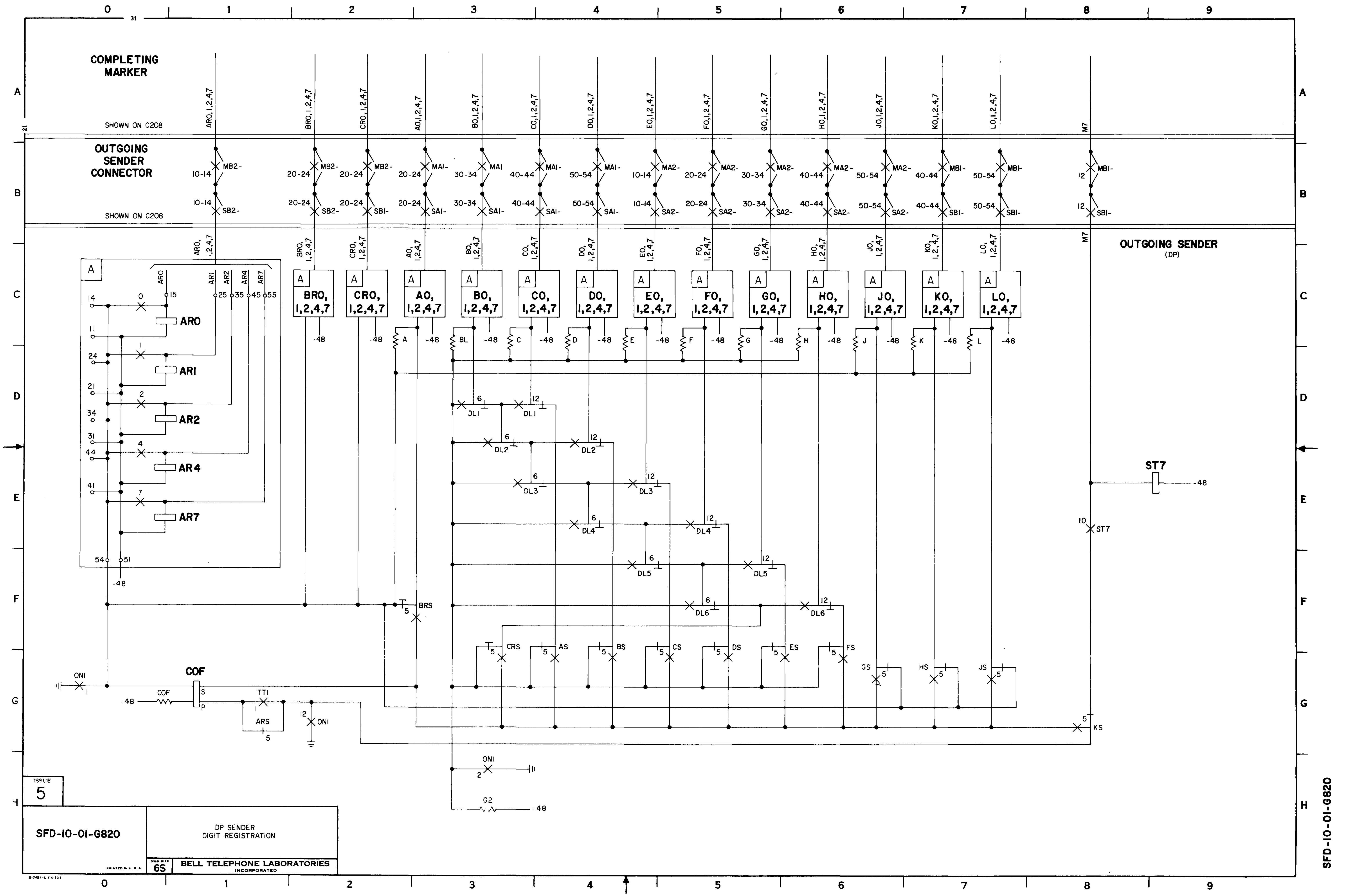
ISSUE 5

BELL LABORATORIES

SFD-10-01-G819

BRUNING 44-131 28142

E-7421-B (6-75) PRINTED IN U.S.A.



ISSUE
5

SFD-10-01-G820

DP SENDER
DIGIT REGISTRATION

DWG SIZE 6S

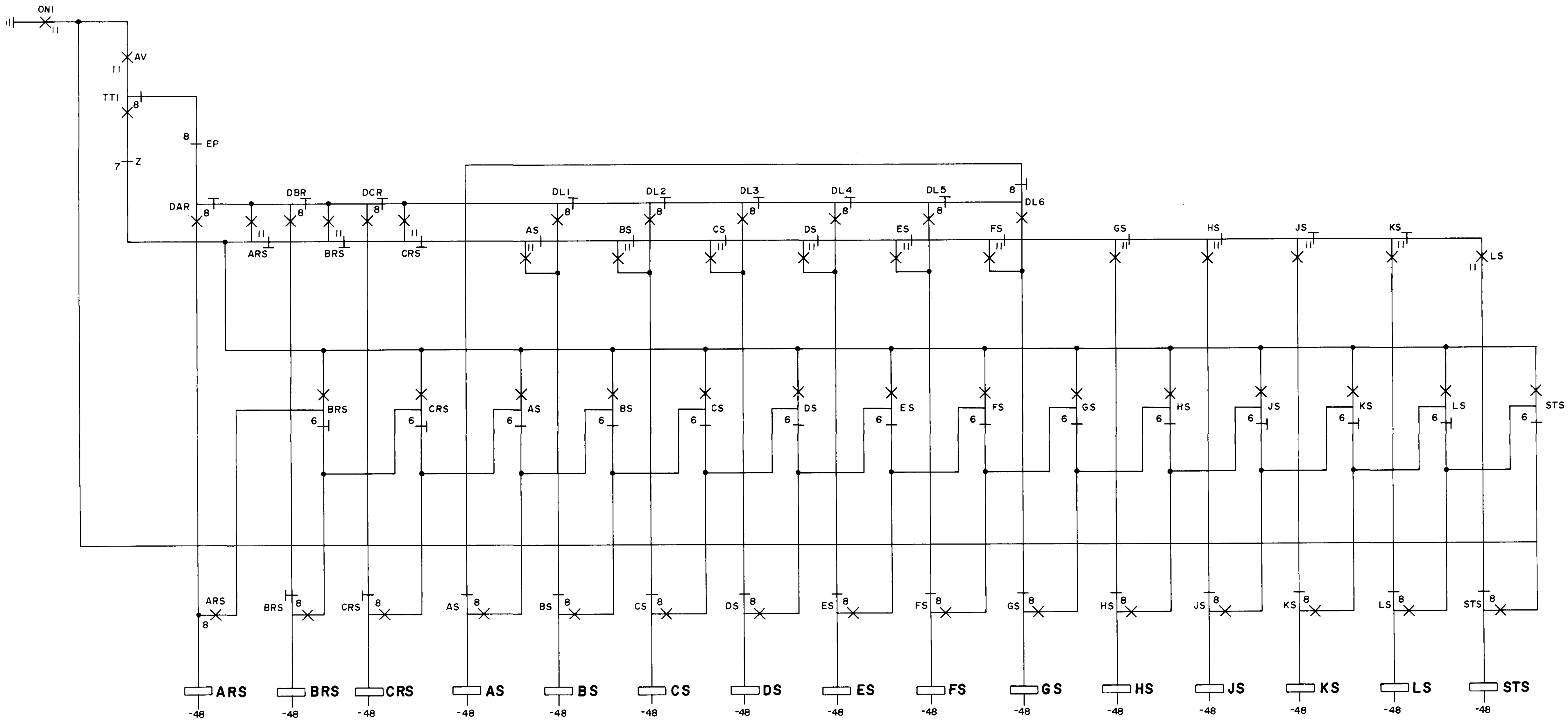
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

E-7481-L (4-73)

SFD-10-01-G820

OUTGOING SENDER
(DP)



SFD-10-01-G821

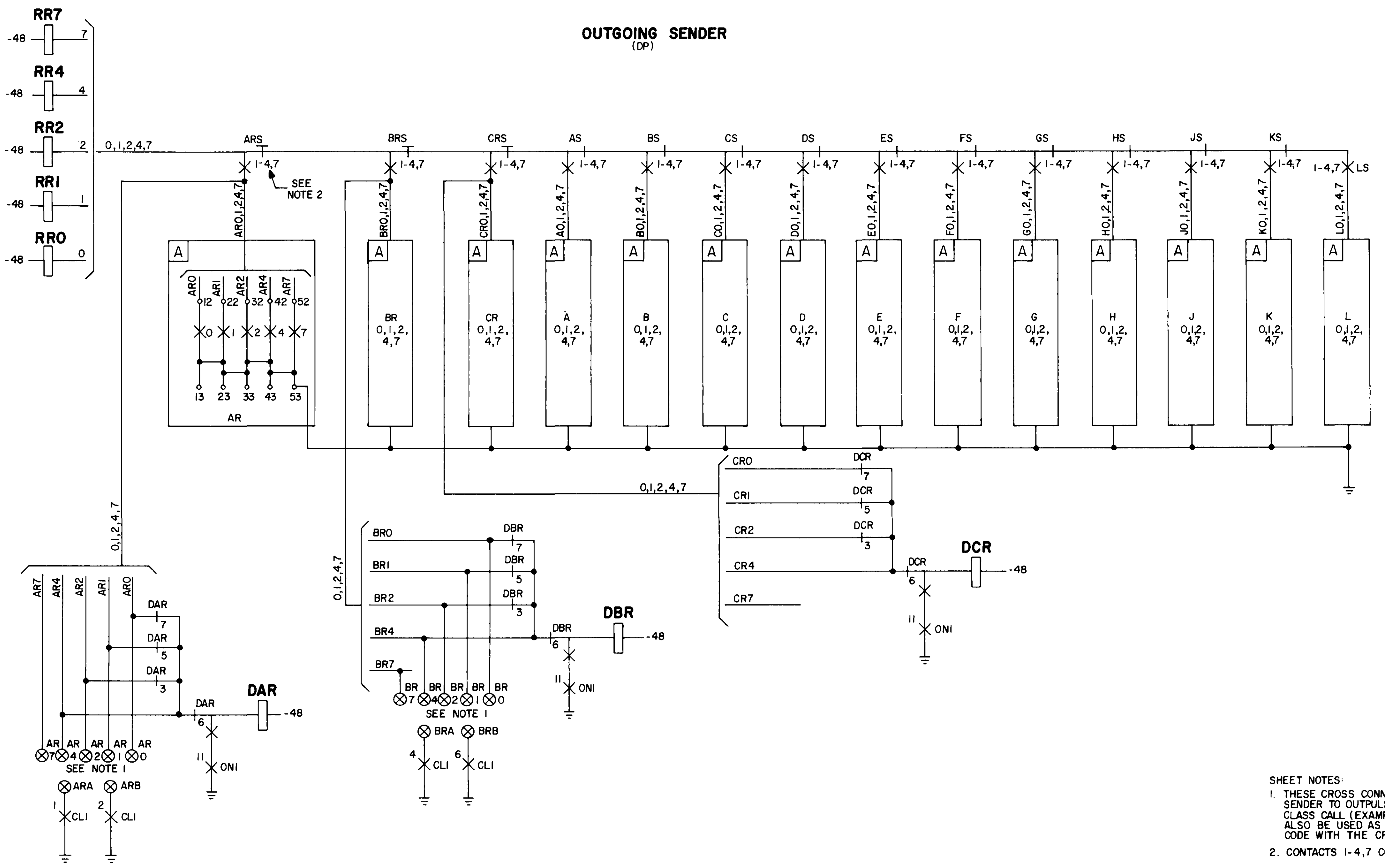
DP SENDER- DIGIT STEERING
FOR OUTPULSING

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G821

E-7421 (6-79) PRINTED IN U.S.A.

OUTGOING SENDER
(DP)



SHEET NOTES:

1. THESE CROSS CONNECTIONS ARE PROVIDED TO PERMIT THE SENDER TO OUTPULSE TWO FIXED ARBITRARY DIGITS ON A CLI CLASS CALL (EXAMPLE: PREFIX 01 OR 11), AND THEY MAY ALSO BE USED AS THE FIXED FIRST TWO DIGITS OF AN XXX CODE WITH THE CR- DIGIT REGISTER AS THE THIRD DIGIT.
2. CONTACTS 1-4,7 CORRESPOND TO LEADS 0,1,2,4,7 RESPECTIVELY.

ISSUE
5

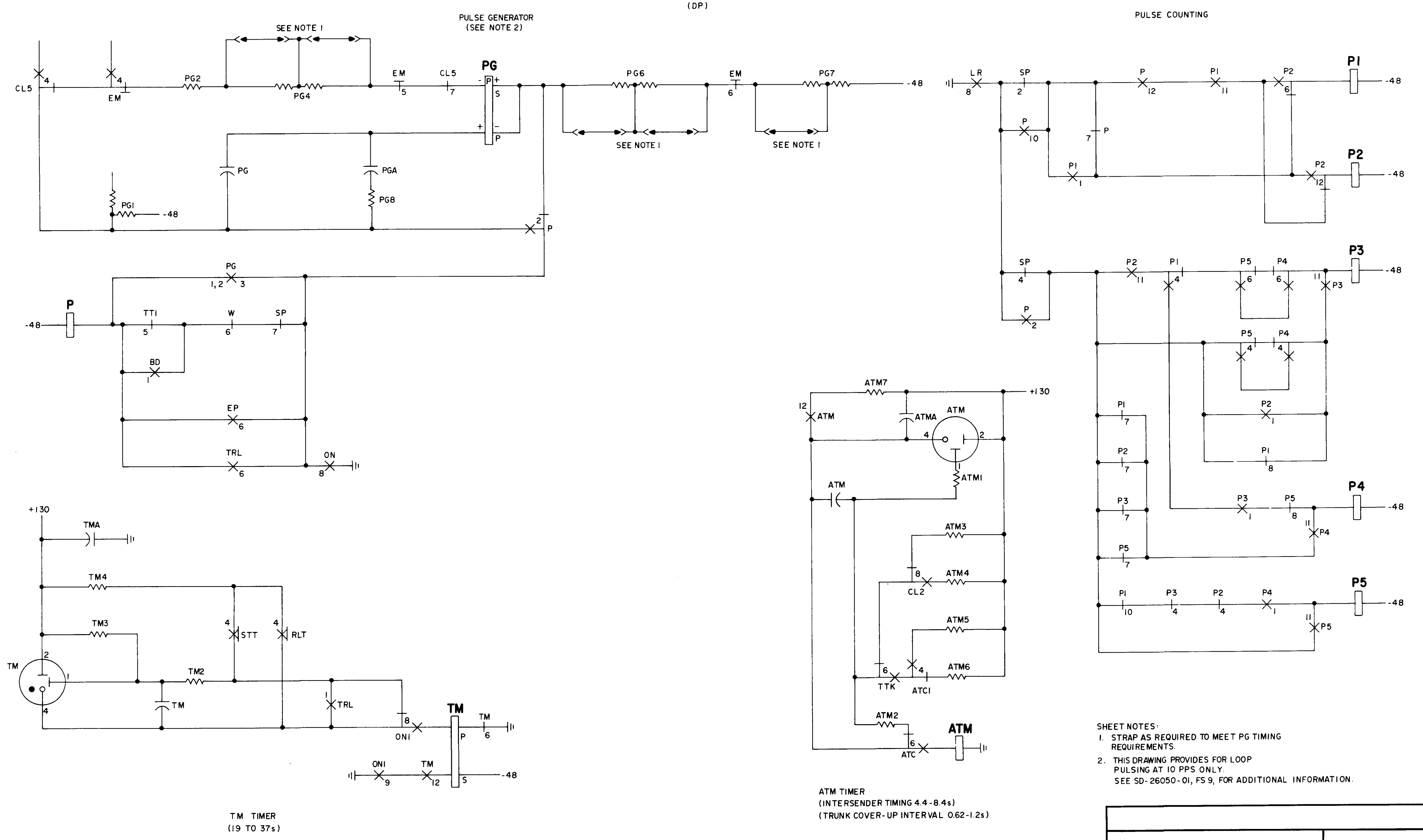
SFD-10-01-G822

DP SENDER
DIGIT REGISTRATION OUTPUT

6S

BELL TELEPHONE LABORATORIES
INCORPORATED

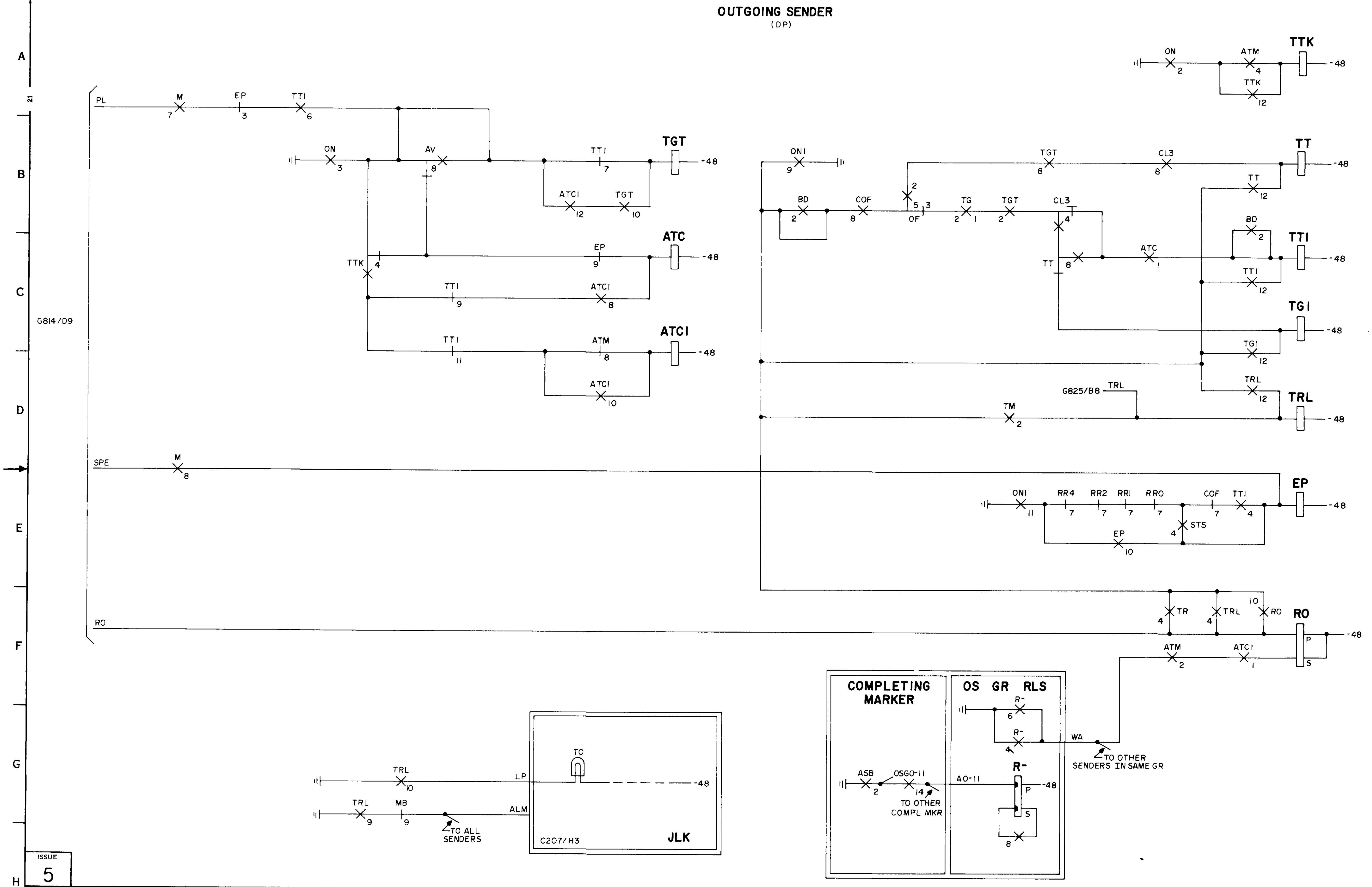
OUTGOING SENDER
(DP)



SHEET NOTES:
1. STRAP AS REQUIRED TO MEET PG TIMING REQUIREMENTS.
2. THIS DRAWING PROVIDES FOR LOOP PULSING AT 10 PPS ONLY. SEE SD-26050-01, FS 9, FOR ADDITIONAL INFORMATION.

DP SENDER PULSE GENERATOR, COUNTING, AND TIMING	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G823

SFD-10-01-G823



ISSUE 5

SFD-10-01-G824

DP SENDER
SUPERVISORY CONTROL

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

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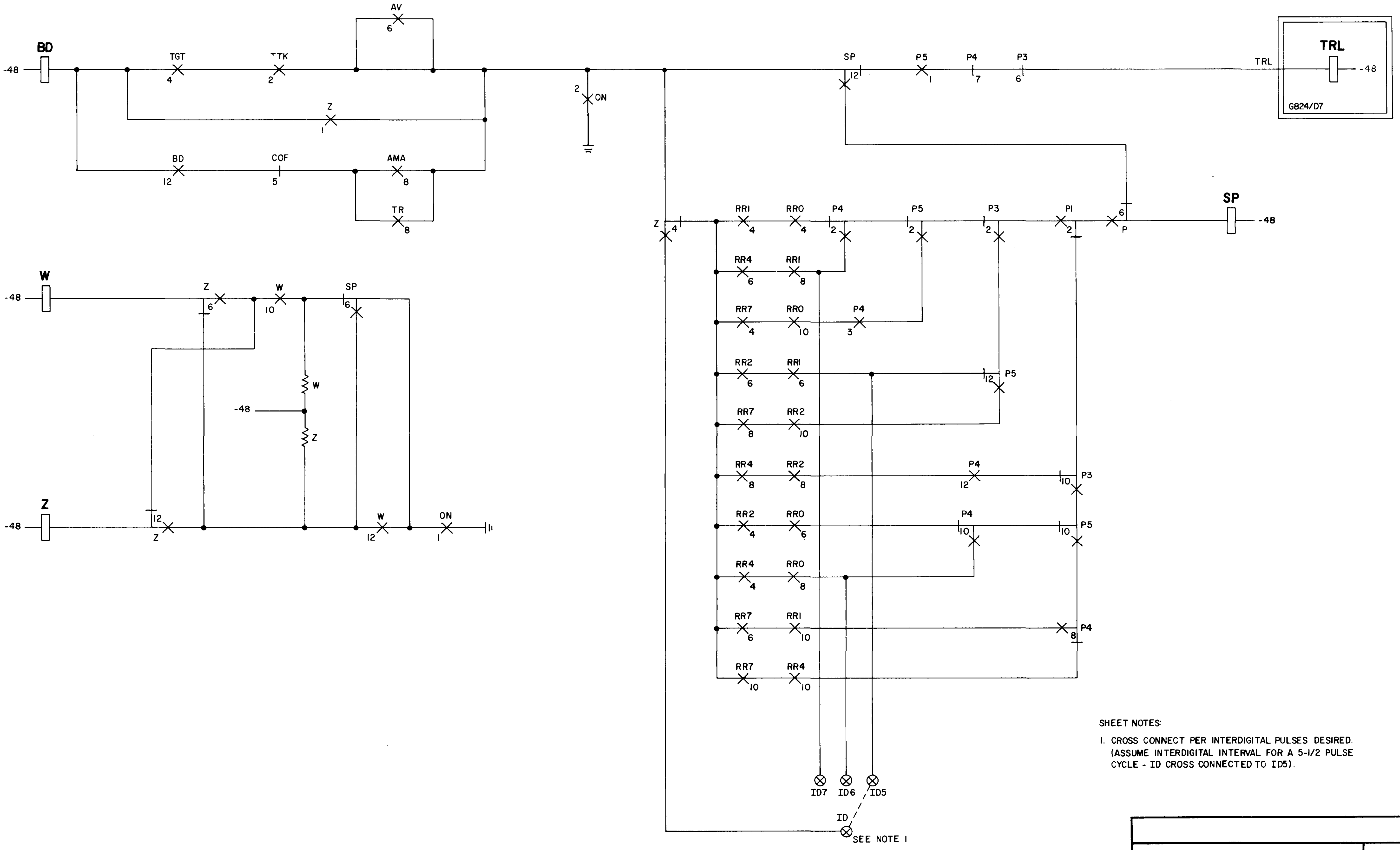
SFD-10-01-G824

OUTGOING SENDER
(DP)



SHEET NOTES:

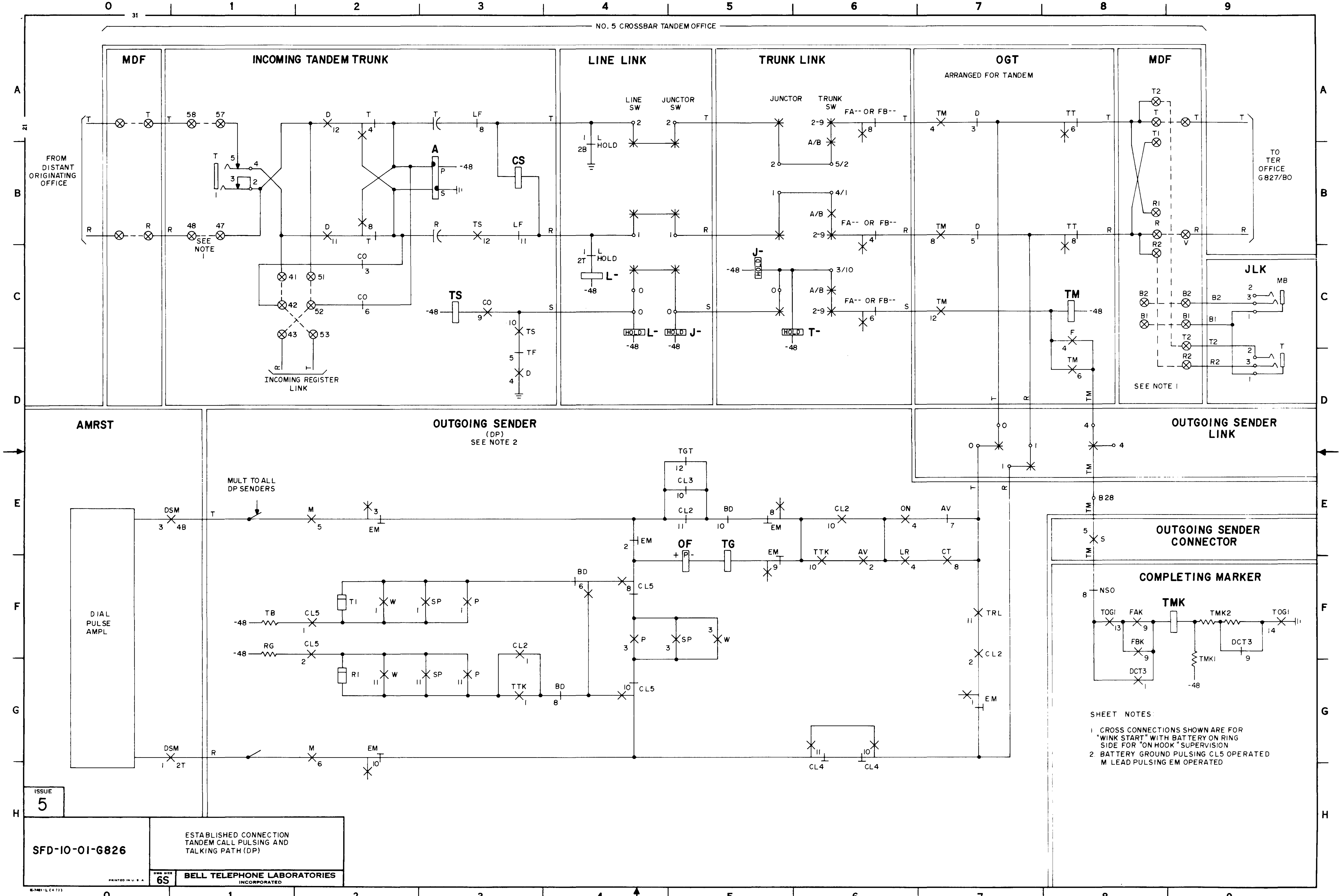
1. CROSS CONNECT PER INTERDIGITAL PULSES DESIRED. (ASSUME INTERDIGITAL INTERVAL FOR A 5-1/2 PULSE CYCLE - ID CROSS CONNECTED TO ID5).

DP SENDER
DIGIT CONTROL

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES
SFD-10-01-
G825

SFD-10-01-G825



SHEET NOTES:

1 CROSS CONNECTIONS SHOWN ARE FOR "WINK START" WITH BATTERY ON RING SIDE FOR "ON HOOK" SUPERVISION
2 BATTERY GROUND PULSING CL5 OPERATED M LEAD PULSING EM OPERATED

ISSUE
5

SFD-10-01-G826

ESTABLISHED CONNECTION
TANDEM CALL PULSING AND
TALKING PATH (DP)

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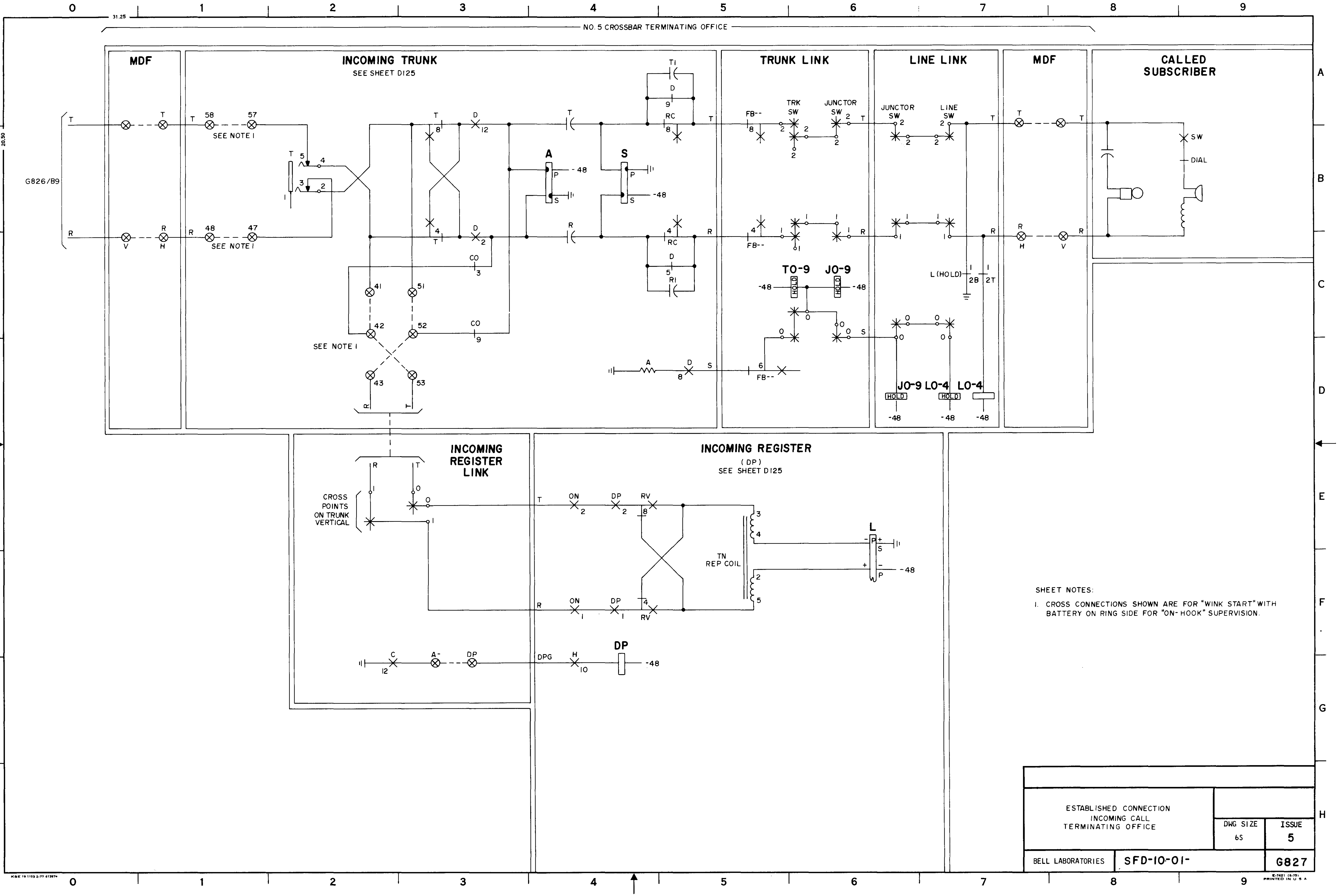
DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

SFD-10-01-G826



SHEET NOTES:

1. CROSS CONNECTIONS SHOWN ARE FOR "WINK START" WITH BATTERY ON RING SIDE FOR "ON-HOOK" SUPERVISION.

ESTABLISHED CONNECTION
INCOMING CALL
TERMINATING OFFICE

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G827

SFD-10-01-G827

ESTABLISHING TANDEM SWITCHING CONNECTION

INDEX

PAGE NO	TITLE
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G903	NO 5 CSBR 2/X DOUBLE SIDED TROUBLE RECORD CARD (E5488) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON A TANDEM CALL.
G904	SIMULATION OF TANDEM CALLS WHICH PRODUCE 1/X DOUBLE SIDED TROUBLE RECORD CARDS.
G905	NO 5 CSBR 1/X DOUBLE SIDED TROUBLE RECORD CARD (E4393) INDICATING DESIGNTIONS WHICH MAY BE PERFORATED ON A TANDEM CALL.
G906	SIMULATION OF TANDEM CALLS WHICH PRODUCE 1/X SINGLE-SIDED TROUBLE RECORD CARDS.
G907	NO 5 CSBR 1/X SINGLE-SIDED TROUBLE RECORD CARD (E3638) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON A TANDEM CALL.
G908	SIMULATION OF TANDEM CALLS WHICH PRODUCE AN AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT.
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G910	TANDEM CLASS OF MARKER TEST.
G911	TANDEM CLASS OF MARKER TEST.
G912	INCOMING TRUNK-TANDEM CLASS OF TEST.
G913	OUTGOING TRUNK-TANDEM CLASS OF TEST.

CAUTION!

DUE TO THE SIMPLIFIED NATURE OF THIS DOCUMENT, INFORMATION SHOWN MAY NOT BE COMPLETE.

PART G9
MAINTENANCE
TANDEM CALL

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G901

K&E 19 1133 6-78 41230.
E-7421 (6-75)
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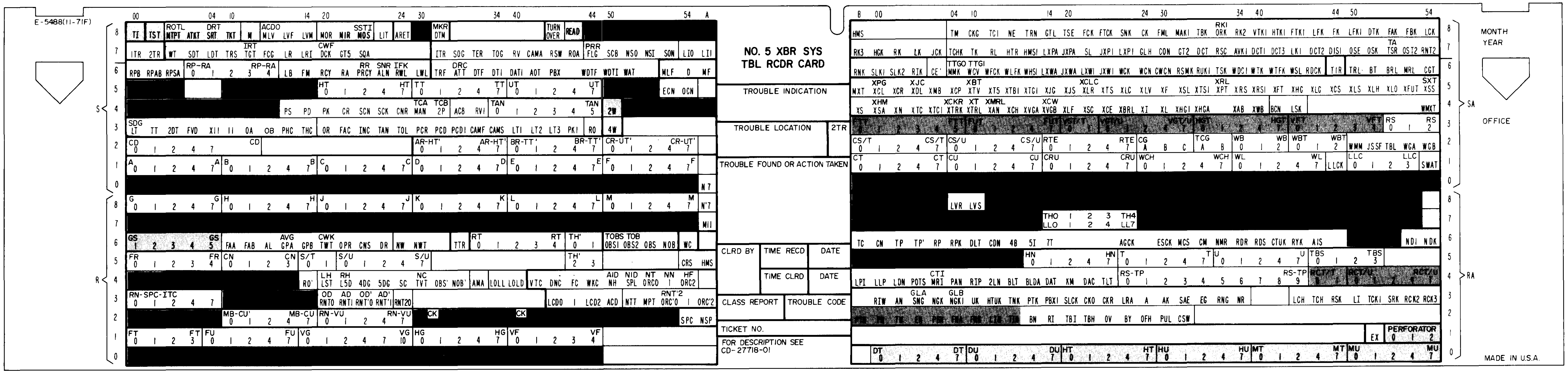
DOUBLE SIDED 2/X TROUBLE RECORD CARD						KEY(S) OR SWITCH(ES) USED TO SIMULATE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				TOG	S7-34	INC OGT ITNP	TSTA	INC	
							TSTB	OGT/ITNP	
CLASS OF CALL	FIVE DIGIT TANDEM CODES COMP TO OGT			FVD	S3-03	FUD	IC TRNA	FUD FVD	
	TANDEM INC LOCAL COMP CODES, LOCAL AREA CODES, FOREIGN AREA IIX, FOREIGN AREA XOX			TAN	S3,23	TAN	IC	TAN	
INCOMING TRUNK CLASS				ITC(2)	R3,00,02	ITC-RN(2)	ITC	2	
TRANSLATOR CLASS	SIX DIGIT			2DT	S3,02	•2DTO	TRNA	2DT	
	FIVE DIGIT			FVD	S3,03	FVDO		FVD	
	THREE DIGIT			IIX	S3,10	II		II	
	THREE DIGIT			XII	S3,04	XII		XII	
MARKER				MKRCM	S8,30	MT(0-11)			
	TENS			CRT(0,1)	S8,54,A				MTTI
	UNITS			DR(2/5)	S8,44,50-53		MTU	0-9	
CALLED DIGITS A-L(0-9)				A-L(2/5)	S1,00-54 R8,00-44	A-L(0-9)	A-L	0-9	
CLASS OF SERVICE	30,60 OR 100 CLASSES	TENS		CT(2/5)	SA1,8,00-03	CST(0-9)	CST	0-9	
		UNITS		CU(2/5)	SA1,4,10-13	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	SA2,24				
		30-59		CGB	SA2,30	CGB			CGB
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/FT-(2/4)	R1,00-03	FT(0-5	FT	0-5	
		UNITS		FU-(2/5)	R1,04,10-13	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,14,20-24	VG(0-13)	VGU	0-9	VGTI
	HORIZONTAL GROUP			HG-(2/5)	R1,30-34	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,40-44	VF(0-4)	VF	0-4	
TRUNK LINK	FRAME	TENS		FS/T-(1/3)	SA0,21-23	FG(0-2)			FG(0-2)
		UNITS		FS/U-(2/5)	SA0,24,30-33	FS(0-9)	FS	0-9	
			2						FS OR NTFS
OUTGOING TRUNK		TENS		TS/T-(0-1)	SA0,34,40	TS(10-19)			TSTI
		UNITS		TS/U-(2/5)	SA0,41-44,50	TS(0-9)	TSU	0-9	
			2			TS/NTTS			TS OR NTTS
INCOMING TANDEM TRUNK NUMBER	HUNDREDS DIGIT			HT(2/5)	S5,20-24	HT KEY(0-9)	HT	0-9	
	TENS DIGIT			TT(2/5)	S5,30-34	TT KEY(0-9)	TT	0-9	
	UNITS DIGIT			UT(2/5)	S5,40-44	UT KEY(0-9)	UT	0-9	
OUTGOING SENDER			5			OSS			OSS
	SENDER GROUP	TENS	4	OGT/T-(0-1)	R4,0-1	SG(0-10)			SGT
		UNITS		OSG/U-(2/5)	R4,2-4,10,11		SG	0-10	
	GROUP A			SSA	R4,12	SGA			SGA
	GROUP B			SSB	R4,13	SGB			SGB
	SENDER			OS(0-4)	R3,10-14	OS(0-4)	OS	0-4	
CHANNEL				CH-(2/5)	RA7,24,30-33	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	RA8,52,53	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	RA7,44,50-53	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	RA,GS(1-5)	S6,21,R6,0-4	RA(0-3)	RAU	0-9	RATI

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN OGT. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON G909 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. SG KEY OR SWITCH IS LOCATED ON A ARMST PANEL AND IS USED TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND THE OS KEY OR SWITCH.
6. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.

ISSUE 5	DWG SIZE 6S	SIMULATION OF TANDEM CALLS WHICH PRODUCE 2/X DOUBLE SIDED TROUBLE RECORD CARDS.
SFD-10-01-	G902	BELL LABORATORIES

TANDEM CALL (TOG)
2/X DOUBLE SIDED TROUBLE CARD



☐	INPUT TO MARKER
☐	OUTPUT-MKR TO N.G.
■	OUTPUT-MKR TO SDR.
▨	OUTPUT-N.G. TO MKR
■	CIRCUITS/PATHS USED
☐	PROGRESS-TRBL IND.
☐	MISC

NO. 5 XBR 2/X DOUBLE SIDED TROUBLE RECORD CARD (E5488) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON A TANDEM CALL

DWG SIZE	ISSUE	
6S	5	
BELL LABORATORIES	SFD-10-01-	G903

SFD-10-01-G903
8 SHEETS, SHEET 1

PRINTED IN U.S.A.

DOUBLE-SIDED I/X TROUBLE RECORD CARD						KEY(S) OR SWITCH(ES) USED TO SIMULATE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				TOG	S7-34	INC OGT ITNP	TSTA	INC	
							TSTB	OGT/ITNP	
CLASS OF CALL	FIVE DIGIT TANDEM CODES COMP TO OGT			FVD	S3-03	FUD	IC TRNA	FUD FVD	
	TANDEM INC LOCAL COMP CODES, LOCAL AREA CODES, FOREIGN AREA 11X, FOREIGN AREA XOX			TAN	S3,23	TAN	IC	TAN	
INCOMING TRUNK CLASS				ITC(2)	R3,02	ITC-RN(2)	ITC	2	
TRANSLATOR CLASS	SIX DIGIT			2DT	S3,02	2DTO	TRNA	2DT	
	FIVE DIGIT			FVD	S3,03	FVDO		FVD	
	THREE DIGIT			11X	S3,10	11		11	
	THREE DIGIT			X11	S3,04	X11		X11	
MARKER				MKR,CM	S8,30	MT(0-11)			
	TENS			CRT(0,1)	S8,54,A				MTTI
	UNITS			DR(2/5)	S8,34,40-44,50-54		MTU	0-9	
CALLED DIGITS A-L(0-9)				A-L(2/5)	S1,00-54 R8,00-44	A-L(0-9)	A-L	0-9	
CLASS OF SERVICE	30,60 OR 100 CLASSES	TENS		CT(2/5)	R1,50-52,R2,52,53	CST(0-9)	CST	0-9	
		UNITS		CU(2/5)	R0,50-54	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	R1,53				
		30-59		CGB	R1,54	CGB			CGB
LINE LOCATION	FRAME	TENS	1	FT-(1/4/FT-(2/4)	R1,00-03	FT(0-5)	FT	0-5	
		UNITS		FU-(2/5)	R1,04,10-13	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,14,20-24	VG(0-13)	VGU	0-9	VGTI
	HORIZONTAL GROUP			HG-(2/5)	R1,30-34	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,40-44	VF(0-4)	VF	0-4	
TRUNK LINK	FRAME	TENS		FS(0-29)	SA0,00-54	FG(0-2)			FG(0-2)
		UNITS				FS(0-9)	FS	0-9	
			2						
OUTGOING TRUNK		TENS		TS(0-19)	RA8,00-34	TS(10-19)			TSTI
		UNITS				TS(0-9)	TSU	0-9	
			2			TS/NTTS			TS OR NTTS
INCOMING TANDEM TRUNK NUMBER	HUNDREDS DIGIT			HT(2/5)	S5,30-34	HT KEY(0-9)	HT	0-9	
	TENS DIGIT			TT(2/5)	S5,40-44	TT KEY(0-9)	TT	0-9	
	UNITS DIGIT			UT(2/5)	S5,50-54	UT KEY(0-9)	UT	0-9	
OUTGOING SENDER			5			OSS			OSS
	SENDER GROUP		4	OSG(0-11)	R4,00-21	SG(0-10)			SGT
							SG	0-10	
	GROUP A			SSA	R422	SGA			SGA
	GROUP B			SSB	R423	SGB			SGB
	SENDER			OS(0-4)	R3,24,33	OS(0-4)	OS	0-4	
CHANNEL				CH-(0-9)	RA5(10-24)	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	RA5,53,54	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	RA6(20-24)	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	RA GS(1-5)	S6,21,R6,0-4	RA(0-3)	RAU	0-9	RATI

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN OGT. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON G909 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. SG KEY OR SWITCH IS LOCATED ON A ARMST PANEL AND IS USED TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND THE OS KEY OR SWITCH.
6. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.

ISSUE
5

SFD-10-01-G904

SIMULATION OF TANDEM CALLS
WHICH PRODUCE I/X DOUBLE
SIDED TROUBLE RECORD
CARDS.

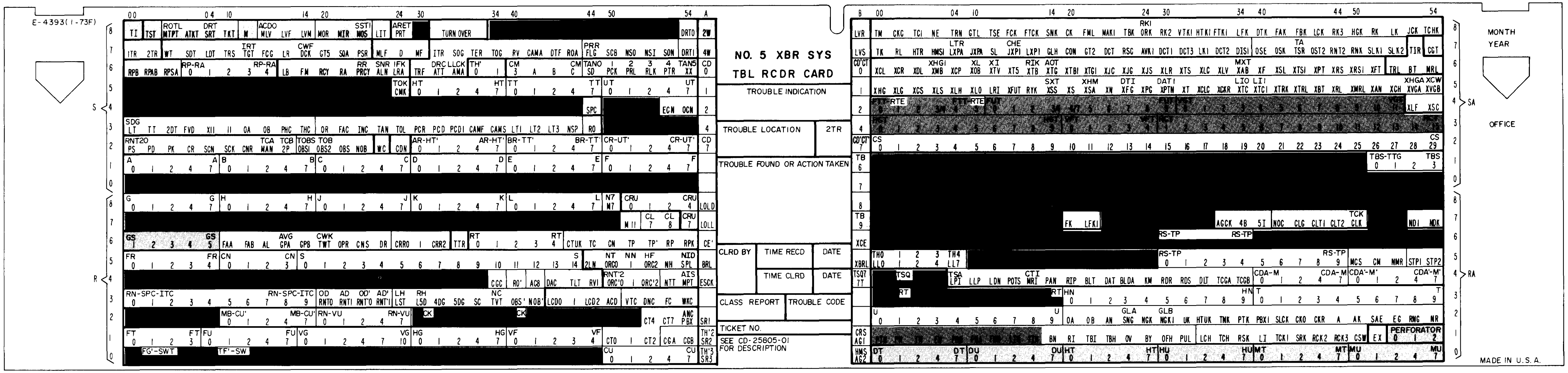
DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

E-7421-L (4-73)

TANDEM CALL (TOG)
I/X DOUBLE SIDED TROUBLE CARD



☐ INPUT TO MARKER

☐ OUTPUT-MKR TO N.G.

■ OUTPUT-MKR TO SDR.

▨ OUTPUT-N.G. TO MKR

■ CIRCUITS/PATHS USED

☐ PROGRESS-TRBL IND

░ MISC

NO. 5 XBR I/X DOUBLE SIDED TROUBLE RECORD CARD (E4393) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON A TANDEM CALL	DWG SIZE 6S	ISSUE 5
BELL LABORATORIES	SFD-10-01-	G905

SFD-10-01-G905
8 SHEETS, SHEET 1

SINGLE SIDED I/X TROUBLE RECORD CARD						KEY(S) OR SWITCH(ES) USED TO SIMULATE RECORD			
FUNCTION			SEE NOTE	DESIGNATION PERFORATED	LOCATION ON CARD	KEY DESIGNATION	SWITCH		KEY DESIGNATION
							DESIGNATION	POSITION	
TYPE OF CALL				TOG	S7,08	INC OGT ITNP	TSTA	INC	
							TSTB	OGT/ITNP	
CLASS OF CALL	FIVE DIGIT TANDEM CODES COMP TO OGT			FVD	S4,02	FUD	IC TRNA	FUD FVD	
	TANDEM INC LOCAL COMP CODES, LOCAL AREA CODES, FOREIGN AREA 11X, FOREIGN AREA XOX			TAN	S4,10	TAN	IC	TAN	
INCOMING TRUNK CLASS				ITC(2)	R7,42	ITC-RN(2)	ITC	2	
TRANSLATOR CLASS	SIX DIGIT			2DT	S7,04	2DTO	TRNA	2DT	
	FIVE DIGIT			FVD	S4,02	FVDO		FVD	
	THREE DIGIT			11X	S4,04	11		11	
	THREE DIGIT			X11	S4,03	X11		X11	
MARKER			7	MKR	S8,15	MT(0-11)			
	TENS			DRT	S7,19-20				MTT1
	UNITS			DR	S8,19-28		MTU	0-9	
CALLED DIGITS A-L(0-9)				A-L(2/5)	S0,0-29 R7,0-24	A-L(0-9)	A-L	0-9	
CLASS OF SERVICE	30,60 OR 100 CLASSES	TENS		CT(1/3)	R1,25-27	CST(0-9)	CST	0-9	
		UNITS		CU(2/5)	R0,25-29	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA	S3,42				
		30-59		CGB	S3,43	CGB			CGB
LINE LOCATION	FRAME	TENS	1	FT-(1/4)/ FT-(2/4)	R1,00-03	FT(0-5)	FT	0-5	
		UNITS		FU-(2/5)	R1,04-08	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VG-(2/6)	R1,9-14	VG(0-13)	VGU	0-9	VGT1
	HORIZONTAL GROUP			HG-(2/5)	R1,15-19	HG(0-9)	HG	0-9	
	VERTICAL FILE			VF-(1/5)	R1,20-24	VF(0-4)	VF	0-4	
TRUNK LINK	FRAME	TENS		FS(0-19)	S1,30-49	FG(0-1)			FG(0-2)
		UNITS				FS(0-9)	FS	0-9	
			2						FS OR NTFS
OUTGOING TRUNK		TENS		TS(0-19)	S0,30-39	TS(10-19)			TST1
		UNITS				TS(0-9)	TSU	0-9	
			2			TS/NTTS			TS OR NTTS
INCOMING TANDEM TRUNK NUMBER	HUNDREDS DIGIT			HT(2/5)	S5,15-19	HT KEY(0-9)	HT	0-9	
	TENS DIGIT			TT(2/5)	S5,20-24	TT KEY(0-9)	TT	0-9	
	UNITS DIGIT			UT(2/5)	S5,25-29	UT KEY(0-9)	UT	0-9	
OUTGOING SENDER			5			OSS			OSS
	SENDER GROUP		4	OSG(0-5)(6-9)	S1,0-5,24-27	SG(0-10)	SG	0-10	SGT
	GROUP A			SSA	S1,6	SGB			SGA
	GROUP B			SSB	S1,7	SGB			SGB
	SENDER			OS(0-4)	S1,8-12	OS(0-4)	OS	0-4	
CHANNEL				CH-(2/5)	R7,50-59	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	R5,30-31	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JG(0-4)	R6,40-44	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	RA,GS(1-5)	S8,54,R5-32-36	RA(0-3)	RAU	0-9	RAT1

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN OGT. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED. THE NO TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
2. USE FS AND TS RATHER THAN NTFS AND NTTS KEYS UNLESS TRUNK TO BE SELECTED IS MADE BUSY.
3. CONSULT JUNCTOR, SEQUENCE TABLE ON G909 FOR SETTING OF JSQ KEY OR SWITCH FOR PARTICULAR JG- AND STP- DESIGNATIONS PERFORATED.
4. SG KEY OR SWITCH IS LOCATED ON A ARMST PANEL AND IS USED TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND THE OS KEY OR SWITCH
6. THE GS1-5 INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.
7. OBSERVE DRT0/1 AND DR0-9 AND CONSULT OFFICE RECORDS TO DETERMINE WHETHER RECORD WAS PRODUCED BY A COMPLETING MARKER.

ISSUE
5

SFD-10-01-G906

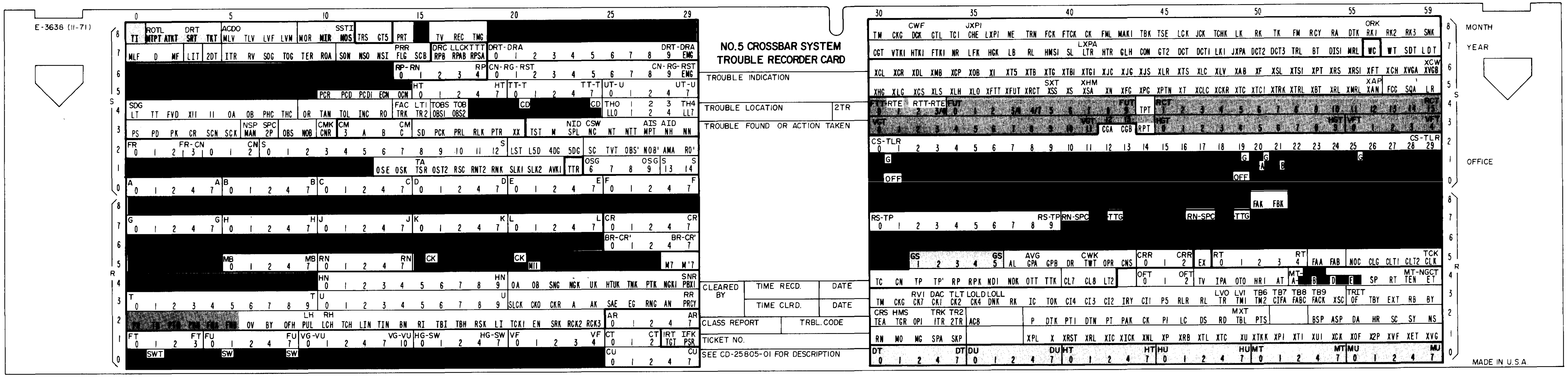
SIMULATION OF TANDEM
CALLS WHICH PRODUCE IX
SINGLE-SIDED TROUBLE
RECORD CARDS

PRINTED IN U.S.A.

DWG SIZE
6S

BELL TELEPHONE LABORATORIES
INCORPORATED

TANDEM CALL (TOG)
I/X SINGLE SIDED TROUBLE CARD



☐ INPUT TO MARKER

☐ OUTPUT MKR TO N.G.

■ OUTPUT MKR TO SDR

▨ OUTPUT NG TO MKR

■ CIRCUITS/PATHS USED

☐ PROGRESS-TRBL IND

☐ MISC

NO. 5 XBR I/X SINGLE SIDED TROUBLE RECORD CARD (E3638) INDICATING DESIGNATIONS WHICH MAY BE PERFORATED ON A TANDEM CALL

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G907

SFD-10-01-G907
8 SHEETS, SHEET 1

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT					KEY(S) OR SWITCH(ES) USED TO SIMULATE RECORD			
FUNCTION			SEE NOTE	TTY OUTPUT	KEY DESIGNATION	SWITCH		KEY DESIGNATION
						DESIGNATION	POSITION	
TYPE OF CALL				TOG	INC OGT ITNP	TSTA	INC	
						TSTB	OGT/ITNP	
CLASS OF CALL	FIVE DIGIT TANDEM CODES COMP TO OGT			FVD	FUD	IC TRNA	FUD FVD	
	TANDEM INC LOCAL COMP CODES, LOCAL AREA CODES, FOREIGN AREA 11X, FOREIGN AREA XOX			TAN	TAN	IC	TAN	
TRUNK CLASS	TCA			TCA/TCB		CL	TCA	
	TCB				TCB		TCB	
INCOMING TRUNK CLASS				ITC 2	ITC-RN(2)	ITC	2	
TRANSLATOR CLASS	SIX DIGIT			2DT	2DTO	TRNA	2DT	
	FIVE DIGIT			FVD	FVDO		FVD	
	THREE DIGIT			11X	11		11	
	THREE DIGIT			X11	X11		X11	
MARKER				MKR CM	MT(0-11)			
	TENS		7	MKR XX				MTTI
	UNITS					MTU	0-9	
CALLED DIGITS A-L(0-9)				DIG. XXXX_____	A-L(0-9)	A-L	0-9	
CLASS OF SERVICE	30,60 OR 100 CLASSES	TENS		CTX	CST(0-9)	CST	0-9	
		UNITS		CUX	CSU(0-9)	CSU	0-9	
	60 CLASSES	0-29		CGA				
		30-59		CGB	CGB			CGB
LINE LOCATION	FRAME	TENS		FTX	FT(0-5)	FT	0-5	
		UNITS		FUX	FU(0-9)	FU	0-9	
	VERTICAL GROUP			VGXX	VG(0-15)	VGU	0-9	VGTI
	HORIZONTAL GROUP			HGX	HG(0-9)	HG	0-9	
	VERTICAL FILE			VFX	VF(0-4)	VF	0-4	
TRUNK LINK	FRAME	TENS		FSXX	FG(0-2)			FG(0-2)
		UNITS			FS(0-9)	FS	0-9	
			2					FS OR NTFS
OUTGOING TRUNK		TENS		TSXX	TS(10-19)			TSTI
		UNITS			TS(0-9)	TSU	0-9	
								TS OR NTTS
INCOMING TANDEM TRUNK NUMBER	HUNDREDS DIGITS			HTX	HT KEY(0-9)	HT	0-9	
	TENS DIGIT			TTX	TT KEY(0-9)	TT	0-9	
	UNITS DIGIT			UTX	UT KEY(0-9)	UT	0-9	
OUTGOING SENDER			5		OSS			OSS
	SENDER GROUP		4	OSG X	SG(0-10)			SGT
						SC	0-10	
	GROUP A			SSA	SGA			SGA
	GROUP B			SSB	SGB			SGB
	SENDER			OSX	OS(0-4)	OS	0-4	
CHANNEL				CHX	CH(0-9)	CH	0-9	
JUNCTOR STEP				STP1/STP2	STP1/STP2			STP1/STP2
JUNCTOR GROUP			3	JGX	JSQ(0-5)	JSQ	0-5	
ROUTE ADVANCE			6	GSX	RA(0-3)	RAU	0-9	RATI

SHEET NOTES:

1. THE CONNECTION ESTABLISHED BY THE MARKER IS FROM THE LINE LINK LOCATION TO AN OGT. THE OPERATION OF THE LINE HOLD MAGNET IS SIMULATED IF THE NTC KEY IS NOT OPERATED. IF THE NTC KEY IS OPERATED, THE NO TEST HOLD MAGNET IN THE ASSOCIATED HORIZONTAL GROUP IS OPERATED TO EXTEND THE CHANNEL CONNECTION BACK TO THE MASTER TEST CONTROL CIRCUIT.
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4. SG KEY OR SWITCH IS LOCATED ON A ARMST PANEL AND IS USED TO DIRECT THE MARKER TO A PARTICULAR SENDER GROUP.
5. THE OSS KEY OPERATED ENABLES THE MARKER TO SELECT A PARTICULAR SENDER CHOSEN BY THE SGA/B KEY AND THE OS KEY OR SWITCH.
6. THE GS X INDICATES THE GROUND SUPPLIES FROM WHICH THE CALL HAS ROUTE ADVANCED.
7. OBSERVE MKR XX AND CONSULT OFFICE RECORDS TO DETERMINE WHETHER RECORD WAS PROVIDED BY A COMPLETING MARKER.

ISSUE
5

SFD-10-01-G908

SIMULATION OF TANDEM CALLS
WHICH PRODUCE AN AUTOMATIC
TROUBLE ANALYSIS
EXCEPTION REPORT

DWG SIZE 6S

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

SFD-10-01-G908

JUNCTOR SUBGROUP SELECTED (JG- DESIGNATION PERFORATED)

NUMBER OF TRUNK LINK FRAMES			JUNCTOR STEP POSITION (STP1 OR STP2)	JUNCTOR SEQUENCE (JSQ-)					
SINGLE	PAIRED	TRIPLED		0	1	2	3	4	5
2	4	6	1 2	JG0 JG3	JG1 JG4	JG2 JG3	JG0 JG4	JG1 JG3	JG2 JG4
2-3	4-6	6-9	1 2	JG0 JG1	JG1 JG2	JG2 JG0	JG0 JG1	JG1 JG2	JG2 JG0
3	6	9	1 2	JG0 JG3	JG1 JG3	JG2 JG3	JG0 JG3	JG1 JG3	JG2 JG3
4	8	12	1 2	JG0 JG2	JG1 JG2	JG0 JG2	JG1 JG2	JG0 JG2	JG1 JG2
5	10	15	1 2	JG0 JG1	JG1 JG0	JG0 JG1	JG1 JG0	JG0 JG1	JG1 JG0
6	12	18	1 2	JG0 JG1	JG0 ** JG1/2	* JG0/1 ** JG0/1	JG0 ** JG1/2	JG0 JG1	** JG0/1 ** JG0/2
7	14	21	1 2	JG0 JG1	JG0 ** JG1/2	JG0 JG1	JG0 ** JG1/2	JG0 JG1	** JG0/1 ** JG0/2
8	16	24	1 2	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1
9	18	27	1 2	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1	JG0 JG1
10	20	30	1	JG0	JG0	JG0	JG0	JG0	JG0

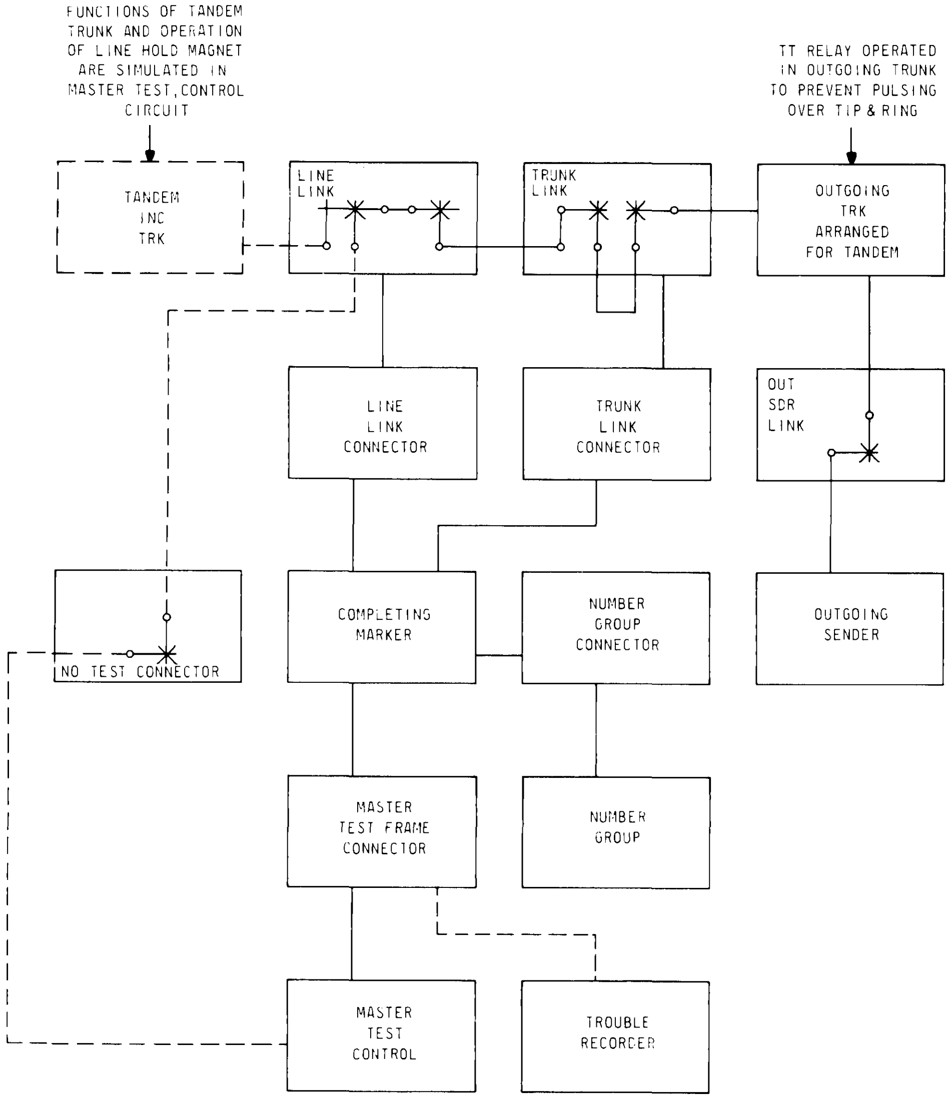
* JG0 DESIGNATION PERFORATED IF THREE JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.
JG1 DESIGNATION PERFORATED IF TWO JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK TRAMES.

** LOWER-NUMBERED JG- DESIGNATION PERFORATED IF TWO JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.
HIGHER-NUMBERED JG- DESIGNATION PERFORATED IF THREE JUNCTOR SUBGROUPS EXIST BETWEEN LINE LINK AND TRUNK LINK FRAMES.

CORRELATION BETWEEN
JUNCTOR GROUP, JUNCTOR STEP
AND JUNCTOR SEQUENCE SELECTION

DWG SIZE	ISSUE
6S	**5**

BELL LABORATORIES **SFD-10-01-** **G909**


FUNCTIONS OF TANDEM TRUNK AND OPERATION OF LINE HOLD MAGNET ARE SIMULATED IN MASTER TEST, CONTROL CIRCUIT
TT RELAY OPERATED IN OUTGOING TRUNK TO PREVENT PULSING OVER TIP & RING
TANDEM INC TRK
LINE LINK
TRUNK LINK
OUTGOING TRK ARRANGED FOR TANDEM
LINE LINK CONNECTOR
TRUNK LINK CONNECTOR
OUT SDR LINK
NO TEST CONNECTOR
COMPLETING MARKER
NUMBER GROUP CONNECTOR
OUTGOING SENDER
MASTER TEST FRAME CONNECTOR
NUMBER GROUP
MASTER TEST CONTROL
TROUBLE RECORDER

BSP-218-122-504 ISS 2
SD-25800-01 MASTER TEST CONTROL CIRCUIT (MTC)

SEE NOTE	FIG OPT	KEY OR SWITCH	FUNCTION
1	67 74	INC KEY TSTA SW (INC)	INCOMING TEST CAUSES THE TEST CIRCUIT TO CONNECT TO THE MARKER UNDER TEST THROUGH THE MTFC AND TO SIMULATE SEIZURE OF THE MARKER BY AN INCOMING REGISTER.
1,2	11,ZVP 11,CY NQ	IC KEY TAN/FVD IC SW TAN/FUD ICL SW TAN TAN(1-4) CL SW TCA/TCB TRNA SW LT FVD/2DT	INCOMING CLASS OPERATED CONTROLS THE INCOMING CLASS TRANSMITTED TO THE MARKER
1,2	WL,WK JF	ITC (0-9) KEY ITC SW (0-9)	INCOMING TRUNK CLASS OPERATED TO CONTROL THE INCOMING TRUNK CLASS TRANSMITTED TO THE MARKER. SEE OFFICE RECORDS FOR CORRECT SETTING.
1,2	19,21 52 81	MT (0-11) KEY MT (0-11) MTU SW (0-9) MTTI KEY	MARKER TEST DIRECTS THE MTFC TO CONNECT THIS TEST CIRCUIT (MTC) TO THE MARKER CORRESPONDING TO THE NUMBER OPERATED.
1,2	4,KX	A-C (0-9) KEY	CALLED DIGITS (A-C) PRIMES THE MARKER WITH A THREE DIGIT AREA CODE OR THREE DIGIT OFFICE CODE.
1,2	4,KX 4,KY 4,KZ 4,JA 4,JB 4,JC 4,JD H,ZVL	D(0-9) KEY E(0-9) KEY F(0-9) KEY G(0-9) KEY H(0-9) KEY J(0-9) KEY K(0-9) KEY D-K SW (0-9)	CALLED DIGITS (D-K) PRIMES THE MARKER WITH THE CALLED DIGITS
2	9	FS KEY	FRAME SELECTION PERMITS SELECTION OF A PARTICULAR TRUNK LINK FRAME UNDER CONTROL OF THE FG(0-2) KEYS AND FS(0-9) KEYS OR SWITCHES

SEE NOTE	FIG OPT	KEY OR SWITCH	FUNCTION
1,2	U 79 80	FG (0,1) KEY (0-2) KEY FG (1,2) KEY	TRUNK LINK FRAME GROUP USED IN CONJUNCTION WITH THE FS(0-9) KEYS OR SWITCH WHEN THE FS KEY IS OPERATED, INDICATES TENS DIGIT ON TRUNK LINK FRAME NUMBER. FOR FRAME GROUP 0, THE FG KEY SHOULD BE IN THE NORMAL POSITION
1,2	U 79 80	FS (0-9) KEY FS SW (0-9)	TRUNK LINK FRAME UNITS WITH FS KEY OPERATED. MAKES ALL TRUNK LINK FRAMES EXCEPT THAT CORRESPONDING TO THE OPERATED FS(0-9) ON FG(0-2) KEYS LOOK BUSY.
1,2	12,GD GE,LK	THTI	TANDEM TRUNK THOUSANDS DIGIT-- NORMAL SIGNALS A TANDEM TRUNK NUMBER THOUSANDS DIGIT 0, OPERATED SIGNALS A TANDEM TRUNK NUMBER THOUSANDS DIGIT 1.
1	12,H 12,JF	HT KEY (0-9) HT SW (0-9)	HUNDREDS DIGIT OF TANDEM TRUNK NO. TRANSMITTED TO MARKER ON INC CLASS FVD OR TAN KEY/SWITCH OPERATED.
1	12,H 12,JF	TT KEY (0-9) TT SW (0-9)	TENS DIGIT OF TANDEM TRUNK NO. TRANSMITTED TO MARKER ON INC CLASS OF TEST.
1	12,JN 12,JF	UT KEY (0-9) UT SW (0-9)	UNITS DIGIT OF TANDEM TRUNK NO. TRANSMITTED TO MARKER ON INC CLASS OF TEST.
1,2	1	ST/RL KEY	START AND RELEASE OPERATED TO ST INITIATES A TEST CALL. OPERATED TO RL CAUSES TEST CALL AND ALL ASSOCIATED CIRCUITS AND RELEASE.
2	10	STP1/STP2 KEY	JUNCTOR SEQUENCE STEP WITH STP1 KEY OPERATED ALLOWS MARKER TO MAKE CHANNEL SELECTION IN JUNCTOR GROUP STEP 1, BUT IF NO CHANNEL IS AVAILABLE AND MARKER ADVANCES TO STEP 2 MAKES ALL CHANNELS LOOK BUSY. WITH STP2 KEY OPERATED, MAKES ALL CHANNELS LOOK BUSY IN JUNCTOR GROUP STEP 1, CAUSING MARKER TO ADVANCE TO STEP 2 WHERE IT IS ALLOWED TO MAKE A CHANNEL SELECTION.
2	10,FS FT 10,EA	CH (0-9) KEY CH (0-9) SW	CHANNEL BLANKS OUT ALL BUT THE DESIRED CHANNEL.
2	10,KY 10,JF	JSQ (0-5) KEY JSQ (0-5) SW	JUNCTOR SEQUENCE RESETS THE JUNCTOR SEQUENCE WALKING RELAYS OF THE MARKER TO A DESIRED WALKING POSITION. REFER TO G909 FOR SETTINGS
3	1	REC KEY	RECORD CAUSES MARKER TO REQUEST A TROUBLE RECORD OF THE TEST CALL BEFORE RELEASING.
3	13	LR KEY	LINK RELEASE OPERATED TO SIMULATE A SIGNAL FROM AN INCOMING REGISTER THAT THE REGISTER LINK FAILED TO RELEASE.
3	13,[illegible], TL	RO KEY	REORDER OPERATED TO SIMULATE A REQUEST FOR REORDER BY THE INCOMING REGISTER.

SHEET NOTES:

1. KEY(S) OR SWITCH(ES) THAT MUST BE OPERATED TO PERFORM THIS CLASS OF TEST.
2. KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD (SEE SFD-G902, G904, G906)
3. KEY(S) OR SWITCH(ES) WHICH MAY BE OPERATED TO CAUSE ADDITIONAL ACTIONS OR TEST VARIATIONS FOR THIS PARTICULAR TEST.

ISSUE	DWG SIZE	
	63	TANDEM CLASS OF MARKER TEST
SFD-10-01-	G910	BELL LABORATORIES

SFD-10-01-G910

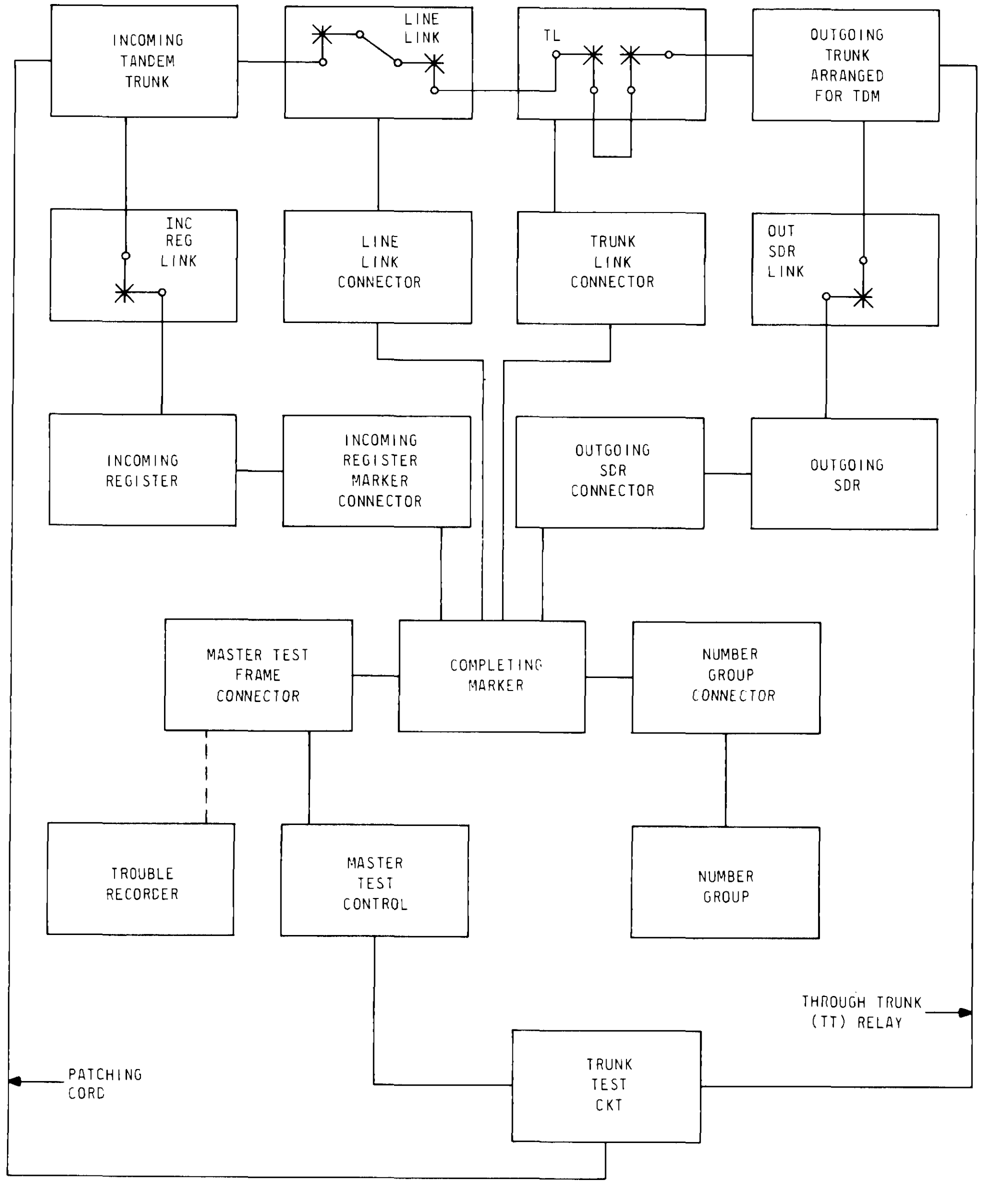
SD-25800-01

SEE NOTE	FIG OPT	KEY OR SWITCH	FUNCTION
3	13	DCK KEY	DOUBLE-CONNECTION TEST OPERATED TO SIMULATE A SIGNAL FROM AN INCOMING REGISTER THAT THERE IS A DOUBLE CONNECTION ON THE INCOMING REGISTER LINK.
3	15	PU KEY	PLUGGING UP OPERATED TO TEST PU RELAY AND RECYCLE MARKER TO TROUBLE INTERCEPT.
3	15	GT/FCG KEY	GROUND TEST/FALSE CROSS AND GROUND OPERATED TO GT APPLIES A HOLD TEST TO THE MARKER GT RELAY. NORMAL APPLIES A RELEASE TEST TO THE MARKER GT RELAY FCG APPLIES AN OPERATE TEST TO THE MARKER FCG RELAY.
3	15	LB/XLH KEY	LINE BUSY/CROSSED LINE HOLD MAGNET WITH LB KEY OPERATED MAKES ANY LINE APPEAR BUSY TO MARKER BY CAUSING THE LHMT LEAD TO BE GROUNDED UPON RECEIVING A GROUND FROM THE MARKER ON THE HGK LEAD. XLH KEY OPERATED, SHUNTS THE LHM RELAY WITH 3,000 OHMS TO SIMULATE A CONDITION SIMILAR TO CROSSED-LINE HOLD MAGNETS.
3	14	NTC KEY	NO TEST CONNECTOR CAUSES THE MARKER TO USE A NO TEST VERTICAL AS THE ORIGINATING LINE FOR THE TEST.
3	33	LP (0-11) KEY	PROGRESS AND IDENTIFIFICATION LAMP CONTROL LP(0-11) KEY OR LP SW AND LPT KEY CONTROLS THE PROGRESS AND IDENTIFICATION LAMPS FOR MARKERS 0-11 RESPECTEVELY, WITH ALL KEYS IN ALL MARKERS LIGHT PROGRESS AND IDENFICATION LAMPS, WITH ANY ONE KEY PULLED OUT. ONLY THE CORRESPONDING MARKER CAN LIGHT PROGRESS AND IDENFICATION LAMPS.
	143	LP SW (0-9)	
		LPT KEY	
1		TLK KEY	TALK USED TO COMPLETE TIP AND RING LEADS TO SIMULATE LINE AT MTF JACK, LAMP AND KEY CIRCUIT. TLK KEY LOCATED ON TRUNK TEST PANEL.
1,2	ZYZ	TCB KEY	TRUNK CLASS A AND B USE IF OFFICE IS ARRANGED FOR TANDEM TOLL OR CAMA TRUNK CLASSES. TCB KEY NORMAL - TRUNK CLASS A.
	NQ	CL SW (TCA/TCB)	
2	9	GPA/GPB	ALLOTTER GROUP A AND B USED ON TESTS REQUIRING THE MARKER TO USE A ROUTE WHICH HAS ALOTTED TRUNK GROUPS.
2	9,QE	RA(0-3) KEY	ROUTE ADVANCE ALLOWS THE MARKER TO FIND AN IDLE TRUNK ONLY AFTER IT HAS ROUTE ADVANCED EXACTLY THE NUMBER OF TIMES CORRESPONDING TO KEY OR SWITCH SETTING.
	9,QF	RA SW (0-5)	
	9,IB	RA SW (0-11)	
	9,CG	RAU SW (0-9)	
	9/99,DL	RAT1 KEY	

TANDEM CLASS OF MKR
TEST

DWG SIZE	ISSUE
6S	5

BELL LABORATORIES SFD-10-01- G911



BSP-218-251-501 ISS 9
SD-25800-01 MASTER TEST CONTROL CKT
SD-25918-01 TRUNK TEST CKT

SHEET NOTES:

1. KEY(S) OR SWITCH(ES) THAT MUST BE OPERATED TO PERFORM THIS CLASS OF TEST.
2. KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD. (SEE SFD G902,904,906)
3. KEY(S) OR SWITCH(ES) WHICH MAY BE OPERATED TO CAUSE ADDITIONAL ACTIONS OR TEST VARIATIONS FOR THIS PARTICULAR TEST.

SD-25800-01

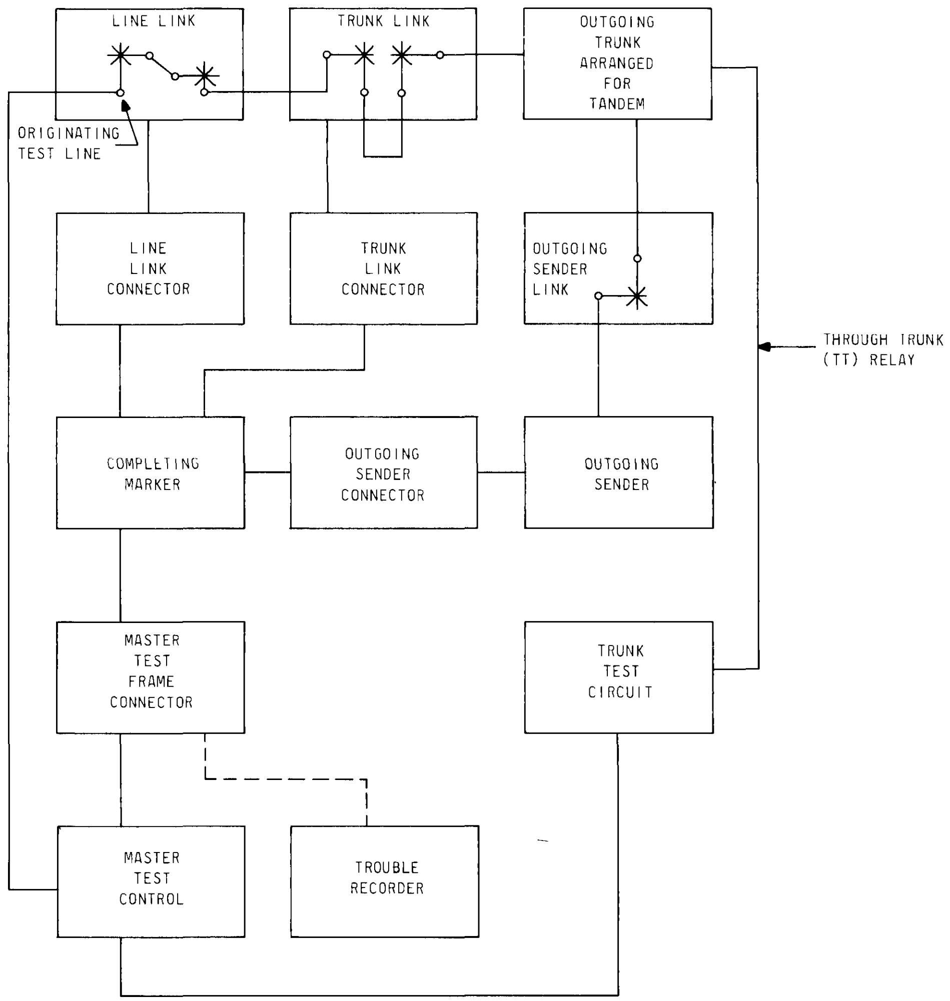
SEE NOTE	FIG OR OPT	KEY OR SWITCH	FUNCTION
1	68, ZO	ITNP KEY	INCOMING TRK NO PULSING CAUSES THE TEST CIRCUIT TO CONNECT TO THE TRUNK TEST CIRCUIT WHICH HAS BEEN PREVIOUSLY PATCHED TO THE INCOMING TRUNK TO BE TESTED.
	74	TSTB SW ITNP	
1,2	11 ZVP	IC KEY TAN	INCOMING CLASS OPERATED CONTROLS THE INCOMING CLASS TRANSMITTED TO THE MARKER.
	11 CY	IC SW TAN	
	11 NQ	TRNB SW FVD/LT ICL SW TAN	
1,2	13, WL	ITC-KEY (0-9)	INCOMING TRUNK CLASS OPERATED TO CONTROL THE INCOMING TRUNK CLASS TRANSMITTED TO THE MARKER SEE OFFICE RECORDS FOR CORRECT SETTING.
	13, JF	ITC SW (0-9)	
1,2	4, KX	A-C (0-9) KEY	CALLED DIGITS (A-C) PRIMES THE MARKER WITH A THREE DIGIT AREA CODE OR THREE DIGIT OFFICE CODE.
	4 ZVL	A-C (0-9) SW	
1,2	4,KX	D(0-9) KEY	CALLED DIGITS (D-K) PRIMES THE MARKER WITH CALLED DIGITS.
	4,KY	E(0-9) KEY	
	4,KZ	F(0-9) KEY	
	4,JA	G(0-9) KEY	
	4,JB	H(0-9) KEY	
	4,JC	J(0-9) KEY	
	4,JD	K(0-9) KEY	
	4,ZVL	D-K SW (0-9)	
1	4	KY KEY	CONNECT NUMBER ALLOWS ANY NUMBER ON KEYS & SW A(0-9) K(0-9) TO BE TRANSMITTED TO THE MARKER

SD-25800-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
1,2	7,RB	RC (1-15) KEY	RINGING COMBINATION CONTROLS THE RINGING COMBINATION SET UP BY THE MARKER ON THE RINGING SELECTION SWITCH.
	7,RC	RC (1-10) KEY OTRC KEY	
	7,JF	RCU SW (1-10)	
	7,ZYH ZVI	RCT I KEY	
1		LS KEY	LOW RESISTANCE SLEEVE OPERATED PLACES A LOW RESISTANCE RELAY ON THE SLEEVE TO THE TRUNK TO DETECT WHEN AN INCOMING REGISTER IS CONNECTED AND TO INFORM THE REGISTER THAT A TEST CALL IS IN PROGRESS
		HS KEY	HIGH RESISTANCE SLEEVE OPERATED PLACES A HIGH RESISTANCE RELAY ON THE SLEEVE TO THE TRUNK TO DETECT WHEN AN INCOMING REGISTER IS CONNECTED (KEYS LOC ON TRUNK TEST PANEL)
1		SLP KEY	SHORT LOOP CONNECTS LOOP OF 3116 OHMS (INCLUDING CS RELAY) TO THE A RELAY OF THE TRUNK CIRCUIT.
		LLP KEY	LONG LOOP CONNECTS LOOP OF 6205.6 OHMS (INCLUDING CS RELAY) TO THE A RELAY OF THE TRUNK CIRCUIT.
		SXS KEY	STEP-BY-STEP OPERATED WHEN TESTING INCOMING TRUNKS FROM A STEP-BY-STEP OFFICE. LOOP OF 2560 OHMS KEYS LOC ON TRUNK TEST PANEL.
1		TLK KEY	TALK USED TO COMPLETE TIP AND RING LEADS TO SIMULATE LINE AT MTF JACK, LAMP, AND KEY CIRCUIT. KEY LOC ON TRUNK TEST PANEL
1	1	ST/RL KEY	START AND RELEASE OPERATED TO ST INITIATES A TEST CALL OPERATED TO RL CAUSES TEST CALL AND ALL ASSOCIATED CIRCUITS TO RELEASE.
3		ANS KEY	ANSWER KEY OPERATES (ANS) RELAY WHICH SUPPLIES TERMINATING RESISTANCE TO THE CALLED SUPERVISORY RELAY OF INCOMING TRUNK CIRCUIT. AT THE SAME TIME RELAY (LK) CHECKS THE CONTINUITY OF THE LOOP AND CONNECTS HIGH TONE BACK THRU THE TRUNK CIRCUIT. KEY LOC ON TRUNK TEST PANEL
3	1	REC KEY	RECORD CAUSES MARKER TO REQUEST A TROUBLE RECORD OF THE TEST CALL BEFORE RELEASING.

THE TRUNK TEST CIRCUIT MAKING AN ITNP TEST CLOSES THE TIP AND RING, AND GROUNDS THE "D" LEAD OF THE TAND TRK. THE TRK SEIZES AN IR, AND BECAUSE OF THE GROUNDED "D" LEAD CONNECTS TO A MARKER IMMEDIATELY WITHOUT WAITING FOR A NUMBER TO BE PULSED. THE MARKER RECEIVING A TEST INDICATION FROM THE REGISTER CONNECTS THRU THE MTFC TO THE MTC WHICH SUPPLIES THE CODE OF AN OUTGOING ROUTE THE MARKER SETS UP THE CONNECTION FROM THE LINE LINK APP OF THE TANDEM INCOMING TRUNK TO THE OGT IN NORMAL MANNER.

ISSUE 5	DWG SIZE 6S	INCOMING TRUNK TANDEM CLASS OF TEST
SFD-10-01-	G912	BELL LABORATORIES



BSP-218-271-501 ISS 8

SD-25800-01 MASTER TEST CONTROL CIRCUIT (MTC)
SD-25918-01 TRUNK TEST CIRCUIT (TTC)

SHEET NOTES:

1. KEY(S) OR SWITCH(ES) THAT MUST BE OPERATED TO PERFORM THIS CLASS OF TEST.
2. KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD. (SEE SFD G902, G904, G906).
3. KEY(S) OR SWITCH(ES) WHICH MAY BE OPERATED TO CAUSE ADDITIONAL ACTIONS OR TEST VARIATIONS FOR THIS PARTICULAR TEST.

WITH FVD,TAN,TOL SELECTION ON IC KEY/SW NORMAL THE TEST CIRCUIT SIMULATES AN ORIGINATING REGISTER. WITH FVD,TAN OR TOL SELECTION ON IC KEY/SW THE TEST CIRCUIT SIMULATES AN INCOMING REGISTER CONNECTED TO A TANDEM INCOMING TRUNK.

SD-25800-01

SEE NOTE	FIG OR OPT	KEY OR SWITCH	FUNCTION
1	68	OGT KEY	OUTGOING CLASS OF TRUNK TEST CAUSES THE TEST CIRCUIT TO CONNECT TO THE TRUNK TEST CIRCUIT AND TO A MARKER THROUGH THE MASTER TEST FRAME CONNECTOR CIRCUIT IN ORDER TO DIRECT THE MARKER TO SET UP A TEST CONNECTION TO THE OUTGOING TRUNK UNDER TEST.
	74	TSTB (SW) OGT	
1,2	11 ZVP	IC KEY TAN	INCOMING CLASS OPERATED CONTROLS THE INCOMING CLASS TRANSMISSION TO THE MARKER.
	11,CY	IC,SW TAN	
	11,NQ	ICL SW TAN	
1,2	11,NQ	CL SW TCA/TCB	TRUNK CLASS SWITCH NORMAL GIVES THE TCA TRUNK AUXILIARY CLASS MARK AND OPERATED GIVES THE TCB TRUNK AUXILIARY CLASS MARK.
	WW	NONE	
1,2	11,OX	2DTO KEY	TRANSLATOR CLASS OPERATE AS REQUIRED AND PRIME MARKER WITH NECESSARY TRANSLATION FOR SELECTED ROUTE.
	17,NP	11/X11 KEY	
	17,SX	LT1 KEY	
	17,PH	LT2 KEY	
	11,EC	FVDO KEY	
	11,OY	LT3 KEY	
	NT,OW	LDC TRNSL (ALL KEYS NORMAL	
	11,NQ	TRNA SW (LT,LT1,LT2, LT3,2DT, X11,11,FVD)	
1,2	19,21	MT(0-11) KEY	MARKER TEST DIRECTS THE MTFC TO CONNECT THIS TEST CIRCUIT (MTC) TO THE MARKER CORRESPONDING TO THE NUMBER OPERATED.
	52	MT(0-11)	
	81	MTU SW (0-9)	
		MTTI KEY	
1,2	4,KX	A-C (0-9) KEY	CALLED DIGITS (A-C) PRIMES THE MARKER WITH A THREE DIGIT AREA CODE OR THREE DIGIT OFFICE CODE.
	4,ZVL	A-C SW (0-9)	
1,2	4,KX	D(0-9)KEY	CALLED DIGITS (D-K) PRIMES THE MARKER WITH THE CALLED DIGITS.
	4,KY	E(0-9)KEY	
	4,KZ	F(0-9)KEY	
	4,JA	G(0-9)KEY	
	4,JB	H(0-9)KEY	
	4,JC	J(0-9)KEY	
	4,JD	K(0-9)KEY	
	4,ZVL	D-K SW (0-9)	
1,2	7XA XB,ZG	CST(0-2) KEY	CLASS OF SERVICE TENS CONTROLS THE CLASS OF SERVICE TENS DIGIT TRANSMITTED TO THE MARKER
	7,XB	CST(0-9) KEY	
		CST SW(0-9)	
1,2	7,JH RY	CSU(0-9) KEY	CLASS OF SERVICE UNITS CONTROLS THE CLASS OF SERVICE UNITS DIGIT TRANSMITTED TO THE MARKER.
	7,JF	CSU SW (0-9)	
1,2	37 GC,GD	CGB KEY (OPR/NOPR)	CLASS GROUP B USED WHEN OFFICE HAS A MINIMUM OF 60 CLASSES OF SERVICE SELECTS CLASS GROUP A WITH KEY IN NORMAL POSITION.
		NONE	
1,2	7,JI	CRU(0-9) KEY	CUSTOMER RATE TREATMENT UNITS PROVIDES RATE TREATMENT INFORMATION TO MARKER
	7,JF	CRU SW (0-9)	
		• NONE	NO RATE TREATMENT REQUIRED
1,2	7,ED	CSGA/ CSGB/ KEY	RATE TREATMENT GROUP A AND B CONTROLS THE RATE TREATMENT GROUP INDICATION TO MARKER
		NONE	
1	4	KY KEY	CONNECT NUMBER ALLOWS ANY NUMBER ON KEYS/SWITCHES A(0-9) THRU L(0-9) TO BE TRANSMITTED TO THE MARKER
1		TLK KEY	TALK USED TO COMPLETE TIP AND RING LEADS TO SIMULATE LINE AT MTF JACK LAMP AND KEY CIRCUIT. TLK KEY LOC ON TRUNK TEST PANEL.

SD-25800-01

SEE NOTE	FIG OR OPT	KEY OR SWITCH	FUNCTION
1	1	ST/RL KEY	START AND RELEASE OPERATED TO ST INITIATES A TEST CALL. OPERATED TO RL CAUSES TEST CALL AND ALL ASSOCIATED CIRCUITS TO RELEASE.
2	9	FS/NTFS KEY	FRAME SELECTION/NO TEST FRAME SELECTION PERMITS SELECTION OF A PARTICULAR TRUNK LINK FRAME UNDER CONTROL OF THE FG(0-2) KEYS AND FS(0-9) KEY/SWITCH WITH (FS KEY) OR WITHOUT (NTFS KEY). FIRST TESTING FOR IDLE TRUNKS ON THAT TRUNK LINK FRAME.
2	U	FG (0,1) KEY	TRUNK LINK FRAME GROUP USED IN CONJUNCTION WITH THE FS(0-9) KEYS OR SWITCH WHEN THE FS OR NTFS KEYS ARE OPERATED. INDICATES TENS DIGITS OF TRUNK LINK FRAME NUMBER.
	79	FG (1,2) KEY	
	80	FG (1,2) KEY	FOR FRAME GROUP 0, THE FG KEY SHOULD BE IN THE NORMAL POSITION.
2	U,79	FS (0-9) KEY	TRUNK LINK FRAME UNITS WITH FS KEY OPERATED, MAKES ALL TRUNK LINK FRAMES EXCEPT THAT CORRESPONDING TO THE OPERATED FS(0-9) ON FG(0-2) KEYS LOOK BUSY.
	80	FS SW (0-9)	
2	9	TS/NTTS KEY	TRUNK SELECTION/NO TEST TRUNK SELECTION MAKES ALL TRUNKS EXCEPT THE ONE CORRESPONDING TO THE OPERATED TS(0-19) KEYS OR SWITCH LOOK BUSY TO THE MARKER AND IF NTTS KEY IS OPERATED, WILL OPERATE THE "TST" RELAY IN THE TLF WHICH REMOVES THE PLUGGED BUSY CONDITION FROM ALL TRUNKS ON THAT TRUNK LINK FRAME.
3	1	REC KEY	RECORD CAUSES MARKER TO REQUEST A TROUBLE RECORD OF THE TEST CALL BEFORE RELEASING.
3		ANS KEY	ANSWER WHEN OPERATED TO ANSWER EXTENDS THE TIP AND RING LEADS TOWARD A TERMINATING TEST LINE CONSISTING OF RESISTORS AND RELAYS SIMULATING AN INCOMING TRUNK CIRCUIT THE RESISTANCE IN THIS LOOP GIVES AN OPERATE TEST TO CALLED PARTY SUPERVISORY OF THE TRUNK CIRCUITS. ANS KEY LOCATED ON TTC PANEL.

OUTGOING TRUNK
TANDEM CLASS OF TEST

DWG SIZE 6S
ISSUE 5

BELL LABORATORIES
SFD-10-01- G913

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